

COSMETIC AND TOILETRY FORMULATIONS

Second Edition

Volume 7

by

Ernest W. Flick



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To
the late Glenice and Wendell
and
Colby and Therese
and
Clayton and Madeleine

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Section I

Antiperspirants and Deodorants

**Antiperspirant Gel
With 20% Active Al/Zr**

Ingredients:	Wt%
Phase A:	
Dimethicone Copolyol (and) Cyclomethicone (Abil EM 97)	2.40
Cyclomethicone (Abil B 8839)	13.80
Isopropyl Palmitate (Tegosoft P)	0.50
Dimethicone (Abil 50)	0.80
Dimethicone Copolyol (Abil B 8852)	0.80
Stearyl Heptanoate (Tegosoft SH)	0.75
Phase B:	
Aluminum Zirconium Tetrachlorohydrate Gly (46% solution)	43.50
SD Alcohol 40	2.50
Propylene Glycol	14.30
Water	10.65
Dipropylene Glycol	10.00

Procedure:

1. Add the raw materials of Phase A, mixing to uniformity at room temperature.
2. Add the raw materials of Phase B to a second vessel, mixing to uniformity. The active salt should be mixed to a clear, colorless solution.
3. Measure the refractive indices of both phases. Adjust Phase B with either propylene glycol or water to match the refractive index of Phase A. The refractive indices should agree to the fourth decimal place for total clarity.
4. Slowly stream Phase B into Phase A with slow (300rpm) multi-blade mixing. The addition rate should match the agitation, not allowing the water to pool on the emulsion surface. After the addition of the water phase is complete, increase the agitation rate to 1,200 rpm for a few minutes. This will build the viscosity of the mixture to a low viscosity, flowing gel.
5. Homogenize the mixture at a low rate. Mix until a firm (shearable) gel is obtained.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Deodorant Gel
With 25% Active ACH

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Dimethicone Copolyol (and) Cyclomethicone (Abil EM 97)	2.40
Cyclomethicone (Abil B 8839)	13.80
Isopropyl Palmitate (Tegosoft P)	0.50
Dimethicone (Abil 50)	0.80
Phenyl Trimethicone (Abil AV 20)	0.50
Dimethicone Copolyol (Abil B 8852)	0.80
Stearyl Heptanoate (Tegosoft SH)	0.75
Phase B:	
Aluminum Chlorohydrate (50% solution)	50.00
SD Alcohol 40	4.00
Sorbitol	0.50
Propylene Glycol	13.95
Water	9.00
Dipropylene Glycol	3.00

Procedure:

1. Add the raw materials of Phase A, mixing to uniformity at room temperature.
2. Add the raw materials of Phase B to a second vessel, mixing to uniformity. The active salt should be mixed to a clear, colorless solution.
3. Measure the refractive indices of both phases. Adjust Phase B with either propylene glycol or water to match the refractive index of Phase A. The refractive indices should agree to the fourth decimal place for total clarity.
4. Slowly stream Phase B into Phase A with slow (300 rpm) multi-blade mixing. The addition rate should match the agitation, not allowing the water to pool on the emulsion surface. After the addition of the water phase is complete, increase the agitation rate to 1,200 rpm for a few minutes. This will build the viscosity of the mixture to a low viscosity, flowing gel.
5. Homogenize the mixture at a low rate. Mix until a firm (shearable) gel is obtained.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulation

Enhanced Antiperspirant Stick

A smooth feeling, high payout stick incorporating a cost effective enhanced efficacy aluminum-zirconium active demonstrating optimal antiperspirant efficacy.

<u>Ingredients:</u>	<u>Wt%</u>
A. Reach AZP-908 SUF	20.0
B. Cyclomethicone (Pentamer)	50.5
C. Stearyl Alcohol	20.0
D. Promyristyl PM-3	5.0
E. PEG-8 Distearate	2.0
F. Talc, 325 mesh	1.0
G. Silica	1.5
H. Fragrance	q.s.

Procedure:

1. Add B to reaction vessel and heat to 65C.
2. Add D and E with moderate stirring.
3. Add C slowly, maintain 65C. Increase agitation and add A. Mix for 5 minutes.
4. Add F and mix 5 minutes.
5. Add G and mix 5 minutes.
6. Add H. Using slow to moderate stirring, cool to 55C and pour into stick casings.

Reduced VOC Antiperspirant Aerosol

This composition was formulated to meet the interim CARB (California Air Resources Board) regulations beginning 12/31/92. The use of a non-volatile ester provides a cleaner formula with reduced residue when compared to many marketed products.

<u>Ingredient:</u>	<u>Wt%</u>
A. Reach 103	12.5
B. Bentone Gel VS-5/PC	12.5
C. Diisopropyl Adipate	15.0
D. Perfume	q.s.
E. Isobutane	60.0

Procedure:

1. Combine B and C using an Eppenbach homomixer at 5000 rpm for 5 minutes.
2. Add A. Mix 10 minutes.
3. Add D and mix 5 minutes.
4. Place mixture in a suitable container and charge with E, as specified.

* Macrospherical 95 is a recommended alternative active.

SOURCE: Reheis, Inc.: Suggested Formulations

Enhanced Antiperspirant Suspension Roll-On

A dry roll-on that incorporates an enhanced efficacy aluminum-zirconium active that demonstrates optimal antiperspirant efficacy.

<u>Ingredients:</u>	<u>Wt%</u>
A. Reach AZZ-902	20.0
B. Bentone 38	2.7
C. SD Alcohol 40	1.8
D. Cyclomethicone (tetramer)	75.5
E. Fragrance	q.s.

Procedure:

1. Disperse B into D using Eppenbach Homomixer. Mix 20 minutes; maintain temperature 25-35C.
2. Add pre-mix of C and E; mix 5 minutes.
3. Add A and mix with moderate shear until uniform.
4. Pour into suitable containers.

Enhanced Efficacy Antiperspirant Suspension Roll-On

This formula employs an enhanced efficacy aluminum zirconium tetrachlorohydrate glycine in a superultrafine particle size distribution, which is the most popular form of the active. Hydrogenated polyisobutene is used to maintain viscosity behavior over time and to reduce whitening residue upon application.

<u>Ingredients:</u>	<u>Wt%</u>
A. Reach AZP 908 SUF	20.00
B. Bentone Gel VS-5/PC	13.50
C. Cyclomethicone (Tetramer)	35.25
D. Panalane L-14E (hydrogenated polyisobutene)	30.00
E. Silica	0.50
F. Fragrance	0.75

Procedure:

1. Mix B and C with overhead mixer for 10 minutes.
2. Add D and mix for 10 minutes.
3. Add A and mix for 15 minutes.
4. Add E and F. Mix for 10 minutes.
5. Homogenize for approximately 4 minutes and pour into suitable containers.

SOURCE: Reheis, Inc.: Suggested Formulations

Non Whitening Antiperspirant Cream

Ingredients:		Wt%
A	Brij 721S, Steareth-21	3.2
	Brij 72, Steareth-2	1.8
	Atlas 1500, Glycerol monostearate	2.0
	Cetyl alcohol, N.F.	5.0
	Arlamol ISML, Isosorbide Laurate	2.5
	Florasun 90, Hybrid Sunflower Seed Oil	0.5
	Dow Corning 344 fluid, Cyclomethicone	4.0
B	Water	23.8
C	Rezal 36G, Aluminum zirconium tetrachlorohydrox glycine (35% solution)	57.1
D	Preservative, Dowicil 200	0.1

Preparation:

Heat (A) to 70C and (B) to 72C. Heat (C) to 60C. Add (B) to (A) with good agitation. When (AB) is uniform slowly add (C). Mix well. When temperature drops to 35C, add (D) and any water that was lost due to evaporation.
Formula CP 1178

Water-in-Oil Antiperspirant Cream

Ingredients:		Wt%
A	Arlamol HD isohexadecane	14.7
	Caprylic capric triglycerides	7.35
	Arlamol E PPG 15 stearyl ether	7.35
	Hydrogenated castor oil	2.0
	Arlacel P135 PEG 30 dipolyhydroxystearate	4.0
B	50% aluminum chlorohydrate solution	40.0
	Water	24.3
C	Preservative	q.s.

Preparation:

Heat (A) to 70C and (B) to 72C. Add (B) to (A), mix well, homogenize for a few minutes. Continue regular stirring to room temperature. Add preservative as per manufacturer's instructions. Replace water lost by evaporation.
Formula CP 1203

SOURCE: ICI Surfactants: Suggested Formulations

Oil-in-Water Roll-on Anti-Perspirant

<u>Ingredients:</u>	<u>Wt%</u>
A. Arlatone 983	2.0
Brij 76	2.0
Arlamol HD	8.0
Arlamol S7	3.0
Arlamol M812	5.0
Lorol C16*	0.5
B. Locron P*	20.0
C. Atlas G-2330	1.25
Propylene glycol	1.25
Preservatives	q.s.
Water	57.0
D. Perfume	q.s.

Manufacture:

1. Heat A and C separately to 70C.
2. Add A to C while stirring.
3. Homogenise the mixture.
4. Add B to this emulsion slowly while stirring.
5. Homogenise again.
6. Cool to 35C whilst stirring continuously.
7. Add perfume.

Comments:

Viscosity: 20,000 mPa s (Brookfield LVT, spindle E, 6 rpm)

Lorol C16 (Cetyl Alcohol, INCI)-Henkel

Locron P (Aluminum Chlorohydrate, INCI)-Hoechst

Formulation F44-12-4

Clear Pumpable Antiperspirant

<u>Ingredients:</u>	<u>Wt%</u>
Alcohol, SDA Formula No. 40	50
Arlamol E pop 15 stearyl ether	5
Aluminum Chlorhydrate (50% solution)	40
Water, deionized	5

Preparation:

Dissolve Arlamol E polyoxypropylene 15 stearyl ether in alcohol at room temperature, and stir until clear. Slowly add aluminum chlorhydrate and water, stirring until clear. Package.
Formulation AE-12

SOURCE: ICI Surfactants: Suggested Formulations

Roll-On Antiperspirant

<u>Raw Materials:</u>	<u>Wt%</u>
A) Miglyol 812 (Caprylic/Capric Triglyceride)	8.50
Imwitor 780K (Isostearyl Diglyceryl Succinate)	5.00
Softisan Gel (Bis-Diglyceryl Polyacyladipate-1 (and) Propylene Glycol Dicaprylate/Dicaprate (and) Stearylalkonium Hectorite (and) Propylene Carbonate)	2.00
B) Carbowax 980 Gel 1%	12.50
Abil WE 09 (Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone Copolyol (and) Hexyl Laurate)	0.50
Locron L (Aluminum Chlorohydrate)	1.00
Preservative	q.s.
Water, up to	100.00
C) Deosafe Perfume 75 428 N/I	1.00

Preparation:

(A) is heated up to 50 degrees C and mixed.

(B) is mixed and heated up to the same temperature.

(B) is emulsified into (A).

At 40 degrees C, (C) is added.

Formulation 1.5X

Deo Antiperspirant Spray with Aerosol

<u>Raw Materials:</u>	<u>Wt%</u>
A) Miglyol 812 (Caprylic/Capric Triglyceride)	2.00
Hydagen DEO (Triethyl Citrate (and) BHT)	2.00
Locron P (Aluminum Chlorohydrate)	3.00
Aerosil 200 (Silica)	0.10
Perfume	q.s.
B) Drivosol 35* (Propane, Isopropane, Butane)	q.s.
*Filling: Lotion: 8%	
Drivosol: 92%, 3.5 bar	

Preparation:

(A) is mixed together thoroughly.

Formulation 1.5W

SOURCE: Creanova Inc.: Suggested Formulations

Roll-on Antispirant Lotion

<u>Ingredients:</u>	<u>Wt%</u>
A. Arlamol E pop 15 stearyl ether	4.00
Brij 721 poe 21 stearyl ether	0.76
Brij 72 poe 2 stearyl ether	3.24
B. Water, deionized	34.86
C. Preservative	q.s.
D. Aluminum Zirconium Tetrachlorohydrate GLY (35% solution)	57.14

Preparation:

Heat (A) to 70C and (B) to 72C. Add (B) to (A) with moderate agitation. Add (C) between 50-60C. Add (D) at 45C. Stir to 35C and replace water lost by evaporation.

Formulation Notes:

The active ingredient is 20% of the formula.

Stability:

The formula is stable for at least four weeks at 5C, 40C, 50C, and four freeze-thaw cycles.

Viscosity:

The viscosity of the formula after one week at 25C was 1,760 cps. After eleven weeks it was 3,328 cps.

Formula AE-13

Antiperspirant Roll-on Lotion with Isosorbide Monolaurate

<u>Ingredients:</u>	<u>Wt%</u>
A. Arlamol E pop 15 stearyl ether	3.0
Arlamol ISML isosorbide monolaurate	2.0
Brij 721 poe 21 stearyl ether	1.4
Brij 72 poe 2 stearyl ether	2.6
B. Water, deionized	51.0
C. Aluminum Zirconium Tetrachlorohydrate GLY (50% aqueous solution)	40.0
D. Preservative	q.s.

Preparation:

Heat (A) to 70C and (B) to 72C. Add (B) to (A) using a propeller stirrer. Add (C) to about 50C and (D) at 45C. At 35C replace water lost by evaporation and package.

Stability:

This formula is stable for at least four weeks at 5C, 25C, 40C and for four freeze-thaw cycles.

Viscosity:

The viscosity of the formula after one week at 25C was 2,960 cps. After four weeks it was 2,800 cps.

Formula AE-14

SOURCE: ICI Surfactants: Suggested Formulations

Roll-On Antiperspirants

Arlamol ISML, isosorbide monolaurate is also functional as an emollient in roll-on formulas due to its pleasant feel on the skin and compatibility with the active ingredients. The following formula illustrates its use with aluminum chlorohydrate.

ACH Formula

<u>Ingredients:</u>	<u>Wt%</u>
A. Arlamol ISML, isosorbid monolaurate	3.0
Arlamol E, POP (15) stearyl ether	3.0
Brij 721, POE (21) stearyl ether	1.5
Brij 72, POE (2) stearyl ether	2.5
B. Water	49.0
C. Aluminum chlorohydrate (50% solution)	40.0
D. Preservative	1.0

Suggested Preparation:

Heat A to 70C and B to 72C. Add B to A using a propeller. Add C at about 50C and D at about 45C. At 35C add water to compensate for loss due to evaporation.

Stability:

The above formula is stable for at least four weeks at 40C and 50C and for at least four freeze-thaw cycles. It has a viscosity of 2240 cps. at 25C.

Al Zr Tetrachlorohydrate-GLY Formula

<u>Ingredients:</u>	<u>Wt%</u>
A. Arlamol ISML, isosorbide monolaurate	4.0
Arlamol E, POP (15) stearyl ether	3.0
Brij 721, POE (21) stearyl ether	1.5
Brij 72, POE (2) stearyl ether	2.5
B. Water	48.0
C. Al Zr Tetrachlorohydrate-gly (50% aqueous solution)	40.0
D. Preservative	1.0

Suggested Preparation:

Heat A to 70C and B to 72C. Add B to A using a propeller. Add C at about 50C and D at about 45C. At 35C add water to compensate for loss due to evaporation.

Stability:

This formula is stable for at least four weeks at 5C, 25C, 40C, and for four freeze-thaw cycles.

SOURCE: ICI Surfactants: Arlamol ISML Suggested Formulations

Roll on Deodorant Emulsion

<u>Component:</u>	<u>Wt%</u>
I. Emulgate SE/Glyceryl Stearate (and) Ceteareth-20 (and) Ceteareth-12 (and) Cetearyl Alcohol (and) Cetyl Palmitate	4.5
Eumulgin B 2/Ceteareth-20	1.0
Cetiol LC/Coco-Caprylate/Caprates	5.0
Cetiol OE/Dicaprylyl Ether	5.0
Hydagen C.A.T./Triethyl Citrate	2.0
II. Water, deion.	73.5
III. Carbopol 980 (2% sol.)	7.5
NaOH (1% sol.)	1.5
Preservative	q.s.
Viscosity, mPas: 4400 Brookfield, 23C	
pH-Value: 5	
<u>Preparation in the Laboratory:</u>	
1. Heat phase I to 85C and stir until homogeneous.	
2. Heat phase II to 85C and stir slowly into phase I, emulsify for 5 min.	
3. Allow the emulsion to cool with stirring, avoiding the incorporation of air.	
4. Add phase III at 30C.	
Formulation No.: 93/060/23	

Antiperspirant Spray

<u>Component:</u>	<u>Wt%</u>
I. Emulgate SE/Glyceryl Stearate (and) Ceteareth-20 (and) Ceteareth-12 (and) Cetearyl Alcohol (and) Cetyl Palmitate	4.5
Eumulgin B2/Ceteareth-20	1.0
Cetiol LC/Coco-Caprylate/Caprates	5.0
Cetiol OE/Dicaprylyl Ether	5.0
II. Water, demin.	15.8
III. Water, demin.	48.7
IV. Locron L	20.0
Aluminum Chlorohydrate, Preservative, Perfume	q.s.
pH-Value: 4.2	
Viscosity, 23C, mPas, Brookfield: <100	
<u>Preparation in the Laboratory:</u>	
1. Heat phase I to 85C and stir until homogeneous.	
2. Heat phase II to 85C and stir slowly into phase I.	
3. Stir phase III (which is at room temperature) slowly into the hot emulsion I/II (80C).	
4. Allow the emulsion to cool with stirring in such a way that it remains in continual motion. Avoid incorporation of air.	
Add phase IV at 30C.	
Formulation No.: F-1724/302	
SOURCE: Henkel KGaA: Suggested Formulations	

Stick Antiperspirants

Arlamol ISML, isosorbide monolaurate is an excellent choice for an emollient in antiperspirant systems. In stick formulas it provides a smooth, dry feel and shows dramatic improvement in anti-whitening and anti-flaking characteristics proven by panel studies. In the formula below containing aluminum chlorohydrate, the efficacy improved with the presence of Arlamol ISML vs. the control without it.

<u>Ingredients:</u>	<u>Wt%</u>
Cyclomethicone	45.0
Arlamol ISML, isosorbide monolaurate	10.0
Stearyl alcohol	15.0
Aluminum chlorohydrate powder	25.0
Hydrogenated castor oil	5.0

Suggested Preparation for Antiperspirant Sticks:

Heat Arlamol ISML, isosorbide monolaurate, stearyl alcohol, and hydrogenated castor oil to 70C or until completely melted. Slowly add antiperspirant active with stirring while maintaining 70C. When antiperspirant active is completely dispersed, remove from heat and continue stirring until temperature drops to 60C. At this point add the cyclomethicone (at 60C) to the mixture, stir well, add fragrance and pour into sticks just before mixture sets up. Cool rapidly to avoid any setting of dispersed antiperspirant active.

Excellent application, anti-whitening, and anti-flaking properties resulted with the following formula (compared to a control without Arlamol ISML emollient) containing aluminum zirconium tetrachlorohydrate-gly as the active ingredient. Efficacy studies were not determined.

<u>Ingredients:</u>	<u>Wt%</u>
Cyclomethicone	48.5
Arlamol ISML, isosorbide monolaurate	10.0
Al Zr Tetrachlorohydrate-gly	20.0
Stearyl alcohol	16.0
Hydrogenated castor oil	5.0
Fragrance	0.5

SOURCE: ICI Americas: ARLAMOL ISML Suggested Formulations

Section II

Baby Products

Baby Cream**Concept Statement:**

A rich emollient cream containing ISL for moisturizing properties suitable for baby skin.

<u>Ingredients:</u>	<u>Wt%</u>
1. Rita EGMS (Glycol Stearate)	9.00
2. Stearic Acid	2.00
3. Mineral Oil	8.00
4. Ritawax ALA (Cetyl Acetate and Acetylated Lanolin Alcohol)	1.00
5. Ritalan (Lanolin Oil)	1.00
6. Rita CA (Cetyl Alcohol)	0.50
7. Propylparaben	0.10
8. Pationic ISL (Sodium Isostearoyl Lactylate)	2.00
9. Distilled/Deionized Water	73.60
10. Propylene Glycol	1.50
11. TEA 50%	0.90
12. Methylparaben	0.20
13. Germall II	0.20

Compounding Procedure:

Combine items 1-8 and heat to 70C. Combine items 9-13 and heat to 70C. Add oil to water and mix until cool.

Formulation Ref. No. 123-10

Baby Shampoo**Concept Statement:**

A super mild shampoo for gentle cleaning. Makes hair soft, shiny and easy to comb.

<u>Ingredients:</u>	<u>Wt%</u>
1. Distilled/Deionized Water	55.90
2. Sodium Lauryl Sulfate (28%)	30.00
3. Lauramide DEA	5.00
4. Ritapeg 150 DS (PEG-150 Distearate)	2.00
5. Ritabate-20 (Polysorbate-20)	2.00
6. Ritapan DL (Panthenol)	0.50
7. Methylparaben	0.10
8. Sucrose Cocoate	3.00
9. Sodium Chloride (25%)	1.00
10. Patlac LA (Lactic Acid)	0.50

Compounding Procedure:

Heat item 1 to 70C. Add items 2 to 8, in order, bringing the temperature back to 70C after each addition and stir until clear. Cool to 40C. Add item 9. Add item 10 to adjust pH between 6.5-7.0.

Formulation Ref. No. 123-11

SOURCE: Rita Corp.: Suggested Formulations

Baby Hair Conditioner Formulation

Natrosol HEC provides a rich appearance to this product by raising the viscosity from less than 100 to 3,400 cps (mPas).

This crystal-clear conditioner provides gentle conditioning, detangles, and allows easy wet and dry combing.

<u>Ingredients:</u>	<u>Wt%</u>
Natrosol 250HHR CS	1.0
Water	74.1
Cetrimonium chloride (25%)	12.2
Lauramine oxide (30%)	10.2
Polyquaternium-17 (62%)	1.5
Propylene glycol	1.0
Perfume, preservative	q.s. to 100.0

Procedure:

1. Disperse Natrosol in water with good agitation. Mix until fully dissolved.
2. Add the remaining ingredients in the order listed, mixing well between additions. (Brookfield viscosity at 30 rpm, 25C=3,420 cps [mPas])

SOURCE: Aqualon Division, Hercules Inc.: Suggested Formulation

Baby Shampoo

Clear, 14.9% active ingredient

<u>Raw Materials:</u>	<u>Wt%</u>
A: Genapol LRO liquid (Sodium Laureth Sulfate)	15.00
B: Genapol AMG (Magnesium PEG-3 Cocamide Sulfate)	20.00
Fragrance	0.30
Water	48.60
Dyestuff solution	q.s.
Preservative	q.s.
Extrapon chamomile special	2.00
Gelita Sol C (Hydrolyzed Collagen)	1.00
Genagen CAB (Cocamidopropyl Betaine)	12.00
C: Genapol L-3 (Laureth-3)	1.10

Procedure:

1. Stir the components of B one after another into A.
2. If necessary adjust the pH.
3. Finally adjust the viscosity with C.

SOURCE: Hoechst Aktiengesellschaft: Formulation B I/4036

Baby Lotion**Concept Statement:**

A light baby lotion combining the emollience of Ritalan, Ritachol and Ritawax, with Pationic ISL, for additional moisturization.

Ingredients:

	Wt%
1. Rita GMS (Glyceryl Stearate)	3.00
2. Pationic SSL (Sodium Stearoyl Lactylate)	2.00
3. Ritalan (Lanolin Oil)	3.00
4. Ritachol (Mineral Oil and Lanolin Alcohol)	10.00
5. Ritawax ALA (Cetyl Acetate and Acetylated Lanolin Alcohol)	1.00
6. Propylparaben	0.10
7. Pationic ISL (Sodium Isostearoyl Lactylate)	2.00
8. Distilled/Deionized Water	74.70
9. Propylene Glycol	4.00
10. Methylparaben	0.20
11. Germall II	0.20
12. Fragrance	0.20

Compounding Procedure:

Combine ingredients 1-7 and heat to 70C. Combine water with ingredients 9-11 and heat to 70C. Add oil phase and mix until cool. Add ingredients 12.

Formulation Ref. No. 123-18B

Baby Lotion**Concept Statement:**

A light baby lotion containing Ritalan and Ritawax for emollience and Pationic ISL for moisturization.

Ingredients:

	Wt%
1. Rita CA (Cetyl Alcohol)	2.00
2. Rita GMS (Glyceryl Stearate)	2.50
3. Pationic SSL (Sodium Stearoyl Lactylate)	0.75
4. Ritalan (Lanolin Oil)	3.00
5. Ritachol (Mineral Oil and Lanolin Alcohol)	6.00
6. Ritawax ALA (Cetyl Acetate and Acetylated Lanolin Alcohol)	1.00
7. Pationic ISL (Sodium Isostearoyl Lactylate)	0.50
8. Methylparaben	0.20
9. Propylparaben	0.10
10. Distilled/Deionized Water	79.55
11. Propylene Glycol	4.00
12. Germall II	0.20
13. Fragrance	0.20

Compounding Procedure:

Combine items 1-9 and heat to 80C. Combine items 10-12 and heat to 80C. Add oil to water and mix until uniform. Allow to cool and add item 13.

Formulation Ref. No. 123-24

SOURCE: R.I.T.A. Corp.: Suggested Formulations

Baby Lotion**Concept Statement:**

A light baby lotion combining the emollience of Ritalan, Ritachol and Ritawax, with Ritavena-5, to give a soft skin feel.

<u>Ingredients:</u>	<u>Wt%</u>
1. Rita GMS (Glyceryl Stearate)	1.00
2. Mineral Oil	9.00
3. Stearic Acid	2.00
4. Ritalan (Lanolin Oil)	3.00
5. Ritachol (Mineral Oil and Lanolin Alcohol)	1.00
6. Ritawax ALA (Cetyl Acetate and Acetylated Lanolin Alcohol)	1.00
7. Propylparaben	0.10
8. Distilled/Deionized Water	74.70
9. Ritavena-5 (Hydrolyzed Oat Flour)	2.00
10. Propylene Glycol	4.00
11. TEA (50%)	1.60
12. Methylparaben	0.20
13. Germall II	0.20
14. Fragrance	0.20

Compounding Procedure:

Combine ingredients 1-7 and heat to 70C. Heat 30% of the water portion to 90C and mix with ingredient 9 in blender. Combine remaining 70% of the water with ingredients 10-13 and heat to 70C. Add Ritavena-5 mixture and mix until uniform. Add oil phase and mix until cool. Add ingredient 14.

Formulation Ref. No. 123-9

Diaper Rash Ointment**Concept Statement:**

A soothing ointment to reduce the irritation of rashes, combining the emollient properties of Lanolin, Rita IPP and Rita SSO.

<u>Ingredients:</u>	<u>Wt%</u>
1. Petrolatum	39.20
2. Lanolin USP, X-tra Deo	14.30
3. Rita IPP (Isopropyl Palmitate)	14.30
4. Rita SSO (Sunflower Seed Oil)	3.60
5. Zinc Oxide	28.60

Compounding Procedure:

Combine items 1-4 and heat to 65C. Slowly add item 5 while mixing. If necessary, use high shear mixing and mix until uniform.

Formulation Ref. No. 123-12

SOURCE: R.I.T.A. Corp.: Suggested Formulations

Baby Shampoo

A liquid shampoo which has a low order of eye irritation can be made by carefully selecting the detergents. In the following baby shampoo, the combination of anionic and amphoteric surfactants with G-4280 produces a formula which should be mild, effective and esthetically appealing.

<u>Ingredients:</u>	<u>Wt%</u>
A G-4280	20.0
Sodium trideceth sulfate	12.0
Lauroamphodiacetate	5.0
Cocamidopropyl hydroxysultaine	2.5
Sodium laureth-13 carboxylate	2.0
Water	53.5
Preservative	q.s.
B PEG-150 distearate	5.0
C Citric acid	q.s.

Preparation:

Mix (A) with gentle stirring and heat until homogeneous. Heat to around 60C and add (B) and continue stirring. When clear, cool and adjust pH to 6.8 with (C). Replace water lost by evaporation.
Formula HC-5

Baby Shampoo

Tween 20 Polysorbate 20 has been used as an effective anti-irritant for shampoos.

<u>Ingredients:</u>	<u>Wt%</u>
A Tween 20 polysorbate 20	6.0
Cocoamphodiacetate	6.0
Sodium lauryl sulfate	3.0
Sodium laureth sulfate	3.0
PEG-150 distearate	4.0
Propylene glycol	3.0
Water	75.0
B Citric acid	q.s.

Preparation:

Mix (A) with gentle stirring and heat until homogeneous. Adjust pH to 5.0 to 5.5 with (B).
Formula HC-6

SOURCE: ICI Surfactants: Suggested Formulations

Baby Shampoo**Concept Statement:**

A gentle shampoo containing Ritataine B and Pationic ISL for mildness and moisturization.

Ingredients:

	Wt%
1. Distilled/Deionized Water	47.10
2. Sodium Lauroamphoacetate	15.00
3. Sodium Trideceth Sulfate	10.00
4. Sodium Laureth Sulfate	5.00
5. Ritataine B (Cocamidopropyl Betaine)	4.00
6. Pationic ISL (Sodium Isostearoyl Lactylate)	3.00
7. Ritapeg 150 DS (PEG-150 Distearate)	0.50
8. PEG-80 Sorbitan Laurate	15.00
9. Glydant	0.20
10. Fragrance	0.20
11. Citric Acid	q.s.

Compounding Procedure:

Combine items 1-8 and heat to 70C. Mix until uniform and allow to cool. Add items 9 and 10. Adjust pH with item 11 to 6.0-6.5.

Formulation Ref. No. 123-22

Pearlized Baby Bath**Concept Statement:**

A pearlized body wash designed to be gentle for baby care, combining the mildness of Pationic ISL and Ritataine B.

Ingredients:

	%Wt
1. Distilled/Deionized Water	58.80
2. Pationic ISL (Sodium Isostearoyl Lactylate)	3.00
3. Sodium Trideceth Sulfate (30%)	25.00
4. Ritataine B (Cocamidopropyl Betaine)	5.00
5. Pearlizing Agent	5.00
6. Ritamide C (Cocamide DEA)	3.00
7. Glydant	0.20

Compounding Procedure:

Heat item 1 to 70C. Add items 2-7 while mixing. Mix until uniform and allow to cool.

Formulation Ref. No. 123-14A

SOURCE: R.I.T.A. Corp.: Suggested Formulations

Crystal Clear Baby Shampoo

Sandopan LS-24 and Sandobet SC are mild, multi functional surfactants. Sandobet SC, a mild amphoteric, is compatible with all ionic classes. Sandobet LS-24 is very mild and additionally acts as a hydrotrope to aid in formula stability. Sandopan LS-24 eliminates latent clouding and sludging which can be caused by adverse storage conditions. Velsan D8P-3 is an emollient ester which adds body, control and conditioning.

<u>Ingredients:</u>	<u>Wt%</u>
Deionized Water	60.8
Monamid 716	3.0
Standopol ES-50	11.7
Sandobet SC liquid	21.0
Sandopan LS-24 gel	0.5
Dow 193 Surfactant	1.0
Germaben II	1.0
Velsan D8P-3 liquid	1.0
Fragrance	qs

Procedure:

Charge first four ingredients to vessel. Heat with stirring to 62C. When melted and homogeneous, add water. Cool to room temperature with stirring. Adjust pH to 5.5 with citric acid. Add Germaben II and Velsan D8P3 separately with stirring. Mix until homogeneous.

Properties:

pH: 5.5-6.0
 Viscosity: 1100 cps
 % Solids: 18
 Ross Miles Foam Height: 195/188
 REF: CL29-41: CHS-25

Acid Balanced Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
Ammonium Lauryl Ether Sulfate	13.30
Sandopan DTC acid	5.50
Cocoamidopropyl Betaine	15.60
Deionized Water	qs
Fragrance	qs
Potassium Hydroxide (10%)	qs

Procedure:

Heat Ammonium Lauryl Ether Sulfate and water to 50-55C and stir until solubilized. Pre-mix Sandopan DTC acid and the Cocoamidopropyl Betaine 50-55C then add to main mix. Cool to room temperature, adjust pH to 5.0 with Potassium Hydroxide. Add water to bring up to 100%.

REF: CD21-281-2F: CHS-21

SOURCE: Clariant Corp.: Suggested Formulations

W/O Baby Cream

Formula SK-14 is a water-in-oil zinc oxide cream which functions well as a protective product. The formula may be modified to include Vitamin A, Vitamin D, antihistamines, analgesics, cod liver oil or Peru Balsam to provide a diaper rash treatment. This cream is exceptionally stable and spreads easily on the skin. The combination of Sorbitol Solution, USP and Arlacel 186 Glyceryl Oleate in the ratio of 9:1 forms a unique gel base emulsification system. It provides a water-in-oil emulsion which leaves an unusually nongreasy, nontacky film on the skin surface and imparts a high degree of water-repellency.

W/O Baby Cream

<u>Ingredients:</u>	<u>Wt%</u>
A Arlacel 186	3.0
Sorbitol Solution, USP	27.0
B Mineral oil	10.0
Beeswax	1.0
Ceresin wax	1.0
C Zinc Oxide, USP	20.0
D Water	38.0
Preservative	q.s.

Preparation:

(A) Add the Sorbitol Solution slowly to the Arlacel 186 with continuous agitation at room temperature. Add (B) to (A) and heat to 70C. Add (C) and mix to uniform dispersion. Heat (D) to 72C. Add (D) to (A, B, C) and mix until room temperature is reached. Replace water lost by evaporation. Mill to improve smoothness and shelf life.

A typical mineral oil-based baby lotion is illustrated by Formula SK-14

Baby Lotion

<u>Ingredients:</u>	<u>Wt%</u>
A Mineral oil	20.0
Cetyl alcohol	5.0
Silicone Fluid, 1000 cs	5.0
Arlacel 60 Sorbitan Stearate	2.5
Tween 60 Polysorbate 60	7.5
B Water	60.0
Preservative	q.s.

Preparation:

Heat (A) to 70C. Heat (B) to 72C. Add (B) to (A). Stir until cool. Replace water lost by evaporation.

Formula SK-15

SOURCE: ICI Surfactants: Suggested Formulations

Section III

Bath and Shower Products

After Bath/Shower Milky Lotion

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Deionized Water	87.5
A	Monalac MPL	2.0
A	Monalac MO	2.5
A	Glycerin	2.0
B	Monalac ML	3.0
B	Cetearyl Alcohol	2.0
B	Oleyl Alcohol	1.0

Procedure:

Heat both parts separately to 70C. Add Part B to Part A and homogenize well at 70-75C. Stir cool with minimal aeration to 40-45C and add fragrance, preservative, etc. Adjust the pH to 5.0-6.0 then fill.

Physical Properties:

Appearance: Milky lotion
Formulation F-697

After Bath/Shower Soft Milky Creme

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Deionized Water	75.0
A	Monalac MPL	4.0
A	Monalac MO	5.0
A	Glycerin	4.0
B	Monalac ML	6.0
B	Cetearyl Alcohol	4.0
B	Oleyl Alcohol	2.0

Procedure:

Heat both parts separately to 70C. Add Part B to Part A and homogenize well at 70-75C. Stir cool with minimal aeration to 40-45C and add fragrance, preservative, etc. Adjust the pH to 5.0-6.0 then fill.

Formulation F-698

SOURCE: Mona Industries, Inc.: Suggested Formulations

After-Shower Milky Lotion

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Deionized Water	87.5
A	Monalac MPL	2.0
A	Monalac MO	2.5
A	Glycerin	2.0
B	Monalac ML	3.0
B	Cetearyl Alcohol	2.0
B	Oleyl Alcohol	1.0

Procedure:

Heat both parts separately to 70C. Add Part B to Part A and homogenize well at 70-75C. Stir cool with minimal aeration to 40-45C and add fragrance, preservative, etc. Adjust pH to 5.0-6.0 then fill.

After-Shower Soft Milky Creme

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Deionized Water	75.0
A	Monalac MPL	4.0
A	Monalac MO	5.0
A	Glycerin	4.0
B	Monalac ML	6.0
B	Cetearyl Alcohol	4.0
B	Oleyl Alcohol	2.0

Procedure:

Heat both parts separately to 70C. Add Part B and Part A and homogenize well at 70-75C. Stir cool with minimal aeration to 40-45C and add fragrance, preservative, etc. Adjust pH to 5.0-6.0 then fill.

After-Shower Flowable Milky Creme/Lotion

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Deionized Water	72.0
A	Monalac MPL	4.0
A	Monalac MO	5.0
A	Monaquat SL-5	3.0
A	Glycerin	4.0
B	Monalac ML	6.0
B	Cetearyl Alcohol	4.0
B	Oleyl Alcohol	2.0

Procedure:

Heat both parts separately to 70C. Add Part B and Part A and homogenize well at 70-75C. Stir cool with minimal aeration to 40-45C and add fragrance, preservative, etc. Adjust pH to 5.0-6.0 then fill.

SOURCE: Mona Industries, Inc.: Formulation F-726

Bath Gel

A more complex surfactant system has been selected for this pearlescent bath gel to provide thorough, yet gentle cleansing. Glucamate DOE-120 is used to thicken the product to a gel like consistency. The incorporation of Polyox WSR N-3000 ensures good slip and lubricating properties and improves foam feel. Glucam E-10 functions as a humectant. The bath gel produces a rich, creamy foam which rinses easily while leaving a soft, emollient feel on the skin.

<u>Ingredients:</u>	<u>Wt%</u>
Texapon NSO (Sodium Laureth Sulfate)	9.00
Plantaren 2000 (Decyl Glucoside)	1.00
Texapon SB-3 (Disodium Laureth Sulfosuccinate)	1.00
Dehyton G (Disodium Cocoamphodiacetate)	2.50
Euperlan PK 3000-AM	1.00
Glucamate DOE-120 (PEG-120 Methyl Glucose Dioleate)	1.00
Deionized Water	82.70
Polyox WSR N-3000 (PEG-14M)	0.05
Glucam E-10 (Methyl Gluceth-10)	1.00
Sodium Chloride	0.75
Preservative and Fragrance	q.s.

Disperse Glucamate DOE-120 in part of the water with moderate agitation and gentle heating (45-50C). Remove heat. Add the surfactants. Adjust pH. Separately disperse Polyox WSR N-3000 in Glucam E-10. Add water. Add this premix to the surfactant system. Add preservative and fragrance. Adjust pH. Package.

Viscosity: 7,900 cps (20C, LVT, 3, 12 rpm)

pH: 6.5

Formulation E941-131-28

Shower Gel for Sensitive Gel

This pearlescent shower gel is based on a mild cleansing system thickened synergistically by the combination of Glucamate DOE-120 and lauryl glucoside. This shower gel has low washing active solids (WAS) of 6.0%. Ucare Polymer LK has been selected to provide protective conditioning. Glucam E-20 is used for emollience and humectance. This low WAS shower gel is intended for sensitive or dry skin. It cleanses gently and provides a soft, conditioned feel to the skin.

<u>Ingredients:</u>	<u>Wt%</u>
Standapol ES-2 (Sodium Laureth Sulfate)	4.00
Plantaren 1200 (Lauryl Glucose)	10.00
Euperlan PK 3000-AM	1.00
Glucamate DOE-120 (PEG-120 Methyl Glucoside Dioleate)	0.75
Deionized Water	83.15
Glucam E-20 (Methyl Gluceth-20)	1.00
Ucare Polymer LK (Polyquaternium-10)	0.10
Preservative and Fragrance	q.s.

Disperse Ucare Polymer LK in water with moderate agitation and gentle heating to 50C. Add Glucamate DOE-120 and continue heating until the Glucamate DOE-120 has dissolved. Add the surfactants. Add Glucam E-20. Add preservative and fragrance. Adjust pH to 6.5. Package.

Formulation E942-021-15

SOURCE: Amerchol: Suggested Formulations

Bath Gel with Vitamin E Moisturizing Beads

This sparkling blue bath gel creates luxurious foam, and features gelatin beads which contain Vitamin E and mineral oil to moisturize and nourish the skin.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
1. Deionized Water	45.93
2. Acrylates/C10-30 Alkyl Acrylate Crosspolymer/ Carbopol ETD 2020	1.20
3. Propylene Glycol	6.00
4. Sodium Hydroxide (18%)	0.40
5. Sodium Laureth Sulfate/Standapol ES-3	30.00
6. Propylene Glycol, Diazolidinyl Urea, Methylparaben, Propylparaben/Germaben II	1.00
Part B:	
7. Deionized Water	5.00
8. Benzophenone-4/Uvinul MS-40	0.02
9. Disodium EDTA	0.10
Part C:	
10. Sodium Hydroxide (18%)	2.40
11. Cocoamidopropyl Betaine/Incronam 3	4.00
12. Fragrance/J9262	0.60
13. Polysorbate 20/Tween 20	0.80
14. White Beads w/Vitamin E/Lipopearls	1.00
15. FD&C Blue #1 (0.1%)	0.05
16. D&C Green #5 (0.1%)	1.50

Properties:

Color, Odor, Appearance: Viscous, clear blue gel with beads
 pH: 6.6-6.8
 Viscosity (cP): 5,500-6,500
 Yield Value (dynes/cm²): 300-400
 Clarity (%T): 50-60

Preparation Procedure:

1. Disperse Carbopol ETD 2020 in warm (40C) deionized water using rapid agitation. Reduce mixing speed after polymer is dispersed.
2. Add Propylene Glycol and Sodium Hydroxide. Allow any air to escape before pre-neutralizing. Mix until uniform. Add remaining ingredients in Part A in order.
3. Pre-combine Part B ingredients. Heat water to dissolve. Add Part B to Part A.
4. Add remaining ingredients in order to batch. Precombine fragrance and Tween 20 before adding to batch. Mix until uniform.

SOURCE: B.F. Goodrich Co.: Formulation C0076

Bath and Shower Cleanser

This high-foaming mild cleanser formulation is highly substantive to the skin and will leave a silky talc-like after-feel.

<u>Ingredient:</u>	<u>Wt%</u>
Water	45.0
Sodium Laureth (1) Sulfate (25%)	35.0
Sodium Lauryl Sulfate (30%)	10.0
Monalac MPL	2.0
Monalac MO	2.0
Monalac MAB	5.0
Sodium Chloride	1.0

Adjust the pH to 6.0

Appearance: Clear Viscous Liquid

Solids (%): 16

Viscosity at 25C: 7200 cP

Features:

Lather and foam enhancement

Extra conditioning for skin and hair

Excellent viscosity building properties

Contributes gentle cleansing

Low irritation potential

Cationic at acidic pH

Facial Cleanser

This formulation provides gentle and thorough cleansing, while providing a soft, clean feel to the skin.

<u>Ingredient:</u>	<u>Wt%</u>
Water	55.0
Sodium Chloride	1.0
Sodium Laureth (2) Sulfate (25%)	35.0
Monalac MO	2.0
Monalac MAB	5.0
Monalac MPL	2.0

Adjust the pH to 6.0

Appearance: Clear viscous liquid

Viscosity at 25C: 7200 cP

Solids (%): 14

Features:

Lather and foam enhancement

Extra conditioning for skin and hair

Excellent viscosity building properties

Contributes gentle cleansing

Low irritation potential

Cationic at acidic pH

SOURCE: Mona Industries, Inc.: MONALAC Suggested Formulations

Bath and Shower Gel

A gentle foaming bath and shower gel designed to thoroughly deep cleanse and refresh the skin without disturbing the skin's natural moisture balance.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
Deionized water	26.596
Polyquaternium-10/Ucare Polymer JR-125	0.200
Citric Acid	0.100
Tetrasodium EDTA/Hamp-ene 220	0.100
Methyl paraben	0.150
Sodium PCA/Ajidew N-50	1.000
Part B:	
Sodium Laureth Sulfate/Carsonol SLES-2	45.000
TEA-Cocoyl Glutamate/Amisoft CT-12	15.000
Cocamidopropyl Betaine/Lonzaine C	7.500
PEG-150 Distearate/Kessco PEG-6000 Distearate	0.700
Lauramide DEA/Monamid 716	3.000
Part C:	
Lavender Oil/Lavender Fleurs 40/42	0.200
Ext. D&C Violet No. 2 (0.1% Solution)	0.200
D&C Red No. 33 (1.0% Solution)	0.004
Methylchloroisothiazolinone (and) Methylisothiazolinone/ Kathon CG	0.050
Part D:	
Sodium Chloride	0.200

Procedure:

Disperse Ucare Polymer JR-125 into rapidly agitating deionized water. Heat to 70C. Add remaining Part A ingredients. Mix until uniform. Add Part B ingredients in given order. Mix at 70C until completely homogeneous. Cool to 40C. Add Part C ingredients. Mix well. Add Part D in increments as needed to obtain the desired viscosity. Continue mixing and cooling to 35C. Appearance: Clear, lavender liquid

pH @ 25C: 5.50-6.00

Viscosity: 7,000-12,000 cps (RVT: #5 @ 10rpm @ 25C)

SOURCE: Ajinomoto U.S.A., Inc.: Formula #60-0404-A

Body Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
A) Ammonium Lauryl Sulfate (1) (28.0% active)	13.0
Cocoamidopropyl Betaine (2) (35.0% active)	5.7
Polyquaternium-7 (3) (0.8% active)	4.0
Arlatone MAP Concentrate (4)	4.0
Water	q.s.
B) Sodium Chloride	0.5
C) 50% Potassium Hydroxide	q.s. to pH 7.0
D) Germaben II	q.s.

Preparation:

- *Stir (A), at room temperature, until the mixture is uniform.
- *Add (B) to (A) with moderate stirring.
- *Adjust the pH with (C).
- *Add (D).

Features:

- *Lubricious lather
 - *Excellent cleansing
 - *Smooth after feel
 - *Amide free, low actives system
- (1) Stepanol AM, (2) Tego Betain L-7, (3) Flocare C 107,
(4) C9-15 Alkyl Phosphate.
- Formula CP 1234

Simple Bath Gel

<u>Ingredients:</u>	<u>Wt%</u>
A) Ammonium Lauryl Sulfate (1) (28.0% active)	28.5
Cocoamidopropyl Betaine (2) (35.0% active)	7.1
Arlatone MAP Concentrate (3)	2.5
Water	q.s.
B) Sodium Chloride	1.0
C) 50% Potassium Hydroxide	q.s. to pH 6.5
D) Germaben II	q.s.

Preparation:

- *Stir (A), at room temperature, until the mixture is uniform.
- *Add (B) to (A) with moderate stirring.
- *Adjust the pH with (C).
- *Add (D).

Features:

- *Excellent foam
 - *Amide free, low actives system
 - *Smooth after feel
 - *Feels good during washing
- (1) Stepanol AM (Stepan), (2) Tego Betain L-7 (Goldschmidt),
(3) C9-15 Alkyl Phosphate.
- Formula CP1229

SOURCE: ICI Surfactants: Suggested Formulations

Clear Milk-Based Bubble Bath

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Monalac MAB	30.0
A	Monateric COAB	20.0
A	Monalac MO	4.0
A	Monalac MPL	3.0
A	Deionized Water	28.0
A	Sodium Laureth (2) Sulfate (26%)	15.0

Procedure:

Add in the order listed. Mix Part B well before adding to Part A. Adjust the pH to 6.0-6.5 and add desired preservatives, fragrances, etc.

Physical Properties:

Appearance: Clear yellow liquid

Viscosity at 25C: 6,000 cps

Formulation F-695

Opacified Milk-Based Bubble Bath

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Monalac MAB	30.0
A	Monateric COAB	20.0
A	Monalac MO	4.0
A	Monalac MPL	3.0
A	Deionized Water	22.5
A	Sodium Chloride	1.0
A	Sodium Laureth (2) Sulfate (26%)	13.0
B	Deionized Water	5.0
B	Esi-Cryl 11 Styrene-Acrylic Copolymer	1.5

Procedure:

Add in the order listed. Mix Part B well before adding to Part A. Adjust the pH to 6.0-6.5 and add desired preservatives, fragrances, etc.

Physical Properties:

Appearance: Opaque ivory white liquid

Viscosity at 25C: 720 cps

Formulation F-696

SOURCE: Mona Industries, Inc.: Suggested Formulations

Clear Shower Gel

<u>Raw Materials:</u>	<u>Wt%</u>
Texapon NSO/Sodium Laureth Sulfate	36.0
Plantacare K 55/Lauryl Glucoside (and) Cocamidopropyl Betaine	11.0
Lamesoft PO 65/Coco-Glucoside (and) Glyceryl Oleate	5.0
Gludain W 40/Hydrolyzed Wheat Gluten Hydrolyzed Wheat Protein	2.0
NaCl	0.25
Aqua, preservative	45.75

pH value: 5.5

Viscosity mPas: 4160

WAS (%): 16.9

Preparation in the Laboratory:

Mix all ingredients at room temperature. Adjust the pH value, then adjust the viscosity with salt.

Formulation No.: 94/193/227

Shower Bath

<u>Raw Materials:</u>	<u>Wt%</u>
Texapon NSO/Sodium Laureth Sulfate	40.0
Dehyton K/Cocamidopropyl Betaine	3.5
Plantacare 1200 UP/Lauryl Glucoside	8.0
Lamesoft PW 45	10.0
Methocel E4M Premium EP/Hydroxypropyl Methylcellulose	0.5
NaCl	
Water	38.0
Preservatives	n.B.
Viscosity mPas: 6000	
pH value: 5.5	

Preparation in the Laboratory:

Of Methocel E4M Premium EP and Water has to be manufactured a clear swelling. Texapon NSO, Dehyton K, Plantacare 1200 and Lamesoft PW 45 will be stirred homogeneous one after the other. With citric acid the pH value will be focused at 5.5. The viscosity tuning takes place with NaCl.

Formulation No. 96/056/7

SOURCE: Henkel KGaA: Suggested Formulations

Cream Body Shampoo

This pearlescent white cream contains Jordapon CI-75 Flake and Avanel S-150 CGN for mildness and soft skin, while providing voluminous silky lather.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	58.9
	Hydroxypropyl Methylcellulose/Methocel 40-100	0.1
B	Na4EDTA	0.2
	Triethanolamine, 50%	0.1
C	Sodium C12-15 Pareth-15 Sulfonate/Avanel S-150 CGN	2.3
	Sodium Cocoyl Isethionate (and) Stearic Acid/Jordapon CI-75	27.0
	Ammonium Laureth Sulfate/Alfonic 1412-A	7.0
	Glycol Stearate/Mapeg EGMS	0.5
	Methyl Paraben	0.2
	Sodium Sulfate	2.5
D	Imidazolidinyl Urea/Germall 115	0.2
	Deionized Water	2.0
E	Fragrance	0.5
	Citric Acid, 50%	Q.S.

pH: 6.3-6.8

Viscosity: 20,000 cps (Brookfield #3 @ 1.5 rpm)

Appearance: Viscous pearlescent lotion

Procedure:

Disperse the hydroxypropyl methylcellulose in the part A water at ambient temperature. With good propellor mixing, add the part B ingredients and agitate for at least 20 minutes to ensure complete hydration. Add the part C ingredients and heat to 65C. When uniform, cool to 40C and add part D (premixed). Add the fragrance and adjust the pH. The product is initially a nonviscous liquid which develops into a soft paste after standing at room temperature.

Formulation F-108

Powdered Bath Foam

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Sodium Sesquicarbonate/Crex	78.0
B	Cocamide DEA/Mazamide JT-128	2.0
	Glycerin	2.0
C	Fragrance	Q.S.
	Dyes	Q.S.
D	Sodium Cocoyl Isethionate/Jordapon CI Powder	15.0
E	Maltodextrin/Maltrin M-100	3.0

Procedure:

Add part A to a ribbon blender or P-K V-blender. Premix part B ingredients, spray onto part A with agitation. Follow with the part C ingredients. Add the Jordapon CI Powder and maltodextrin, blend until uniform.

Formulation E-104

SOURCE: PPG Industries, Inc.: Suggested Formulations

Creamy Bath Oil

This unusual bath oil is an emulsion which blooms in the bath, releasing emollients throughout the water. The viscosity is low, yet the system is stable because of the blend of effective S-Maz and T-Maz emulsifiers.

Part:	Ingredient/Trade Name:	Wt%
A	Demineralized Water	41.19
	Na4EDTA	0.20
	Nonoxynol-9/Macol NP-9.5	0.01
	Magnesium Aluminum Silicate/Veegum HV	0.60
	Xanthan Gum/Kelzan	0.10
	Propylene Glycol	6.00
	Methyl Paraben	0.20
B	Petrolatum/Perlatum 410 CG	35.00
	Mineral Oil/Drakeol 9	2.00
	Sorbitan Stearate/S-Maz 60	2.00
	Polysorbate 60/T-Maz 60	4.00
	Polysorbate 80/T-Maz 80	3.00
C	Demineralized Water	5.00
	Triethanolamine	0.30
	Citric Acid	0.20
	Imidazolidinyl Urea/Germall 115	0.20

Procedure:

Mix part B ingredients in the main vessel, heating to 75-80C. In another vessel, blend the part A ingredients with good agitation. Predissolve the methyl paraben in the propylene glycol to speed this step. Warm part A to 75-80C and mix well for 30 minutes to ensure hydration of the Veegum and xanthan gum. With high shear mixing (e.g. a rotor-stator type), add part A to part B to form the emulsion. Maintain good mixing while cooling the batch to below 50C. Blend the Part C ingredients and add to the batch, adjusting the final pH to 6.0-6.5

Formulation G-104

Floating Bath Oil

A teaspoon of this oil spreads a thin film of emollients over the bath water, providing the skin with a very effective moisturizing treatment.

Part:	Ingredient/Trade Name:	Wt%
A	PPG-30 Cetyl Ether/Macol CA-30 P	15.0
	PEG-8 Dioleate/Mapeg 400 DO	1.0
	Isopropyl Palmitate/Propal	39.0
	Fragrance	1.0
	Dyes (oil soluble)	Q.S.
B	Mineral Oil/Drakeol 9	44.0

Appearance: Clear, water-white nonviscous oil

Procedure:

Blend the part A ingredients at room temperature. When uniform and clear, add the mineral oil and mix until uniform.

Formulation G-201

SOURCE: PPG Industries, Inc.: Suggested Formulations

Creamy Shower Gel

<u>Ingredients:</u>	<u>Wt%</u>
Sodium Cocoyl Isethionate	2.37
Water	52.28
Tetrasodium EDTA	0.10
Sodium Laureth Sulfate (28% 2M. E.O.)	25.00
Sodium Lauryl Sulfate (28%)	10.00
Sodium Lactate (and) Sodium PCA (and) Glycine (and) Fructose (and) Urea (and) Niacinamide (and) Inositol (and) Sodium Benzoate (and) Lactic Acid (Lactil)	0.25
DATM (Amilan GST 40)	2.00
PEG-7 Glyceryl Cocoate (Tegosoft GC)	1.00
Cocamidopropyl Betaine (Tego Betaine F 50)	5.00
Glycol Distearate (and) Steareth-4 (Tego Pearl N 100)	2.00
Preservatives	Q.S.
Sodium Chloride	Adjust to desired viscosity
Citric Acid (10%)	Adjust to pH 5.5-6.0 if needed

Procedure:

1. Dissolve Sodium Cocoyl Isethionate in warm water at 60C.
2. Add Sodium Lauryl Sulfate, Sodium Laureth Sulfate.
3. Cool to 40C.
4. Add remaining ingredients in order as listed, stirring between each addition.
5. Cool to 30-35C. Add Tego Pearl N 100 and preservatives.
6. Adjust pH and viscosity.

Creamy "2 in 1" Body Wash

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Glycol Distearate (Tegin EGS)	2.50
Myristic Acid	4.00
Jojoba Oil	5.00
Sodium Laureth Sulfate (28% 2M. E.O.)	45.00
Water	10.00
Phase B:	
Water	19.00
PEG-7 Glyceryl Cocoate (Tegosoft GC)	2.00
Phase C:	
Propylene Glycol (and) PEG-55 Propylene Glycol Oleate (Antil 141L)	2.50
Fragrance, Preservative, etc.	Q.S.
Phase D:	
Cocamidopropyl Betaine (Tego Betaine F 50)	10.00

Procedure:

1. Heat Phase A to approximately 70C while mixing (above the melting point of Tegin EGS).
2. Heat the ingredients of Phase B to the same temperature as Phase A.
3. Stir Phase B into Phase A. Cool to 40C.
4. Add Phase C. Mix well. Avoid air entrapment.
5. Add Phase D with stirring. Avoid air entrapment.

SOURCE: Goldschmidt Chemical Corp.: **Suggested Formulations**

Creme Body Wash with Emollients

This luxurious body wash is rich in foam and moisturizing, creating a smooth, elegant after feel to the skin. Its mildness is the result of surfactant selection and low salt level.

Ingredient/Trade Name:

	<u>Wt%</u>
Part A:	
1. Deionized Water	49.59
2. Acrylates/C10-30 Alkyl Acrylate Crosspolymer/ Carbopol ETD 2020	0.80
3. Sodium Hydroxide (18%)	0.10
Part B:	
4. Deionized Water	10.00
5. Guar Hydroxypropyltrimonium Chloride/Hi-Care 1000	0.30
6. Disodium EDTA	0.05
Part C:	
7. Methyl Gluceth-20 Benzoate/Finsolv EMG-20	2.50
8. Tocopheryl Acetate/Vitamin E Acetate	0.20
9. Cetyl Alcohol	1.00
10. Dimethicone/Dow Corning 200 Fluid, 5000 cs	0.50
11. Sodium Laureth Sulfate (2 mole, 53%)/Standapol ES-250	15.00
12. Cocoamphoacetate (32%)/Miranol Ultra	8.50
13. Ammonium Cocoyl Isethionate (30%)/Jordapon ACI-30G	10.00
Part D:	
14. Phenoxyethanol, Methylparaben, Butylparaben, Ethylparaben, and Propylparaben/Phenonip	0.50
15. Fragrance/Bell Fragrance #J-7820, "Sporty"	0.50
16. D&C Violet #2 (1.0%)/Bell Fragrance #J-7820	0.06
17. Sodium Hydroxide (18%)	0.40

Properties:

Color, Odor, Appearance: Creamy, light lavender gel

Actives (%): 13.67

pH: 6.1-6.5

Viscosity (cP): 7,500-10,500

Yield Value (dynes/cm²): 200-400

Preparation Procedure:

- Part A: 1. Disperse Carbopol ETD 2020 in warm deionized water.
 2. Reduce mixing speed, mix for 20 minutes. 3. Partially neutralize with NaOH (18%). 4. Mix 30 minutes or until uniform.
- Part B: 5. Disperse Hi-Care 1000 in a side vessel (NOTE: Polymer will not swell yet).
6. Add Disodium EDTA. When polymer swells, add Part B to Part A. (NOTE: Part B will become very thick if it is not added after swelling begins.) Mix until uniform.
- Part C: 7. Add 8% of Standapol and all of Jordapon to main batch. Mix slowly to avoid air entrapment.
8. In a side vessel, melt the following ingredients: Finsolv EMG, Vitamin E, Cetyl Alcohol, and Dimethicone at 75C.
9. Add 7% Standapol to melted oil phase, hold heat at 65C until uniform. Add Miranol Ultra to side oil phase, maintaining temperature.
10. Add side oil/surfactant phase to main batch. 11. Mix until uniform. Do not overmix. 12. Add the following ingredients in order with mixing: Phenonip, fragrance, and color.
13. Adjust pH with NaOH (18%) to 6.1-6.5.

SOURCE: B.F. Goodrich Co.: Formulation C0073

Economy Shower Gel

Designed for mildness and value, this basic body cleanser delivers a thick, rich lather. The Carbopol polymer prevents the silicone oil from creaming.

Ingredient/Trade Name:

	<u>Wt%</u>
Part A:	
1. Deionized Water	65.016
2. Acrylates/C10-30 Alkyl Acrylate Crosspolymer/ Carbopol ETD 2020	0.90
3. Sodium Hydroxide (18%)	0.12
Part B:	
4. Deionized Water	8.00
5. Guar Hydroxypropyltrimonium Chloride/Hi-Care 1000	0.10
6. Disodium EDTA	0.05
Part C:	
7. Sodium Laureth Sulfate/Standapol ES-250	18.00
8. Cocoamphoacetate (32%)/Miranol Ultra	5.00
9. Dimethicone/Dow Corning 200 Fluid, 5000 cs	0.70
10. Phenoxyethanol, Methylparaben, Butylparaben, Ethyl- paraben and Propylparaben/Phenonip	0.50
11. Fragrance/Bell Fragrance #J-7820, "Sporty"	0.50
12. FD&C Yellow #5 (1.0%)	0.055
13. FD&C Blue #1 (1.0%)	0.009
14. Sodium Hydroxide (18%)	1.05

Properties:

Color, Odor, Appearance: Green gel

Actives (%): 11.14

pH: 6.1-6.5

Viscosity (cP): 5,000-8,000

Yield Value (dynes/cm²): 125-225

Stability: Passes 28 days at 45C

Preparation Procedure:**Part A:**

1. Disperse Carbopol ETD 2020 in warm deionized water.
2. Reduce mixing speed, mix for 20 minutes.
3. Partially neutralize with NaOH (18%).
4. Mix 30 minutes or until uniform.

Part B:

5. Disperse Hi-Care 1000 in a side vessel (NOTE: Polymer will not swell yet).
6. Add Disodium EDTA. When polymer swells, add Part B to Part A. (NOTE: Part B will become very thick if it is not added after swelling begins.)

Part C:

7. Reduce mixing speed, add the following ingredients to batch in order with mixing: Standapol ES 250, Miranol Ultra. Mix until smooth.
8. Add the following ingredients in order with mixing: Dimethicone, Phenonip, fragrance, and color. ES250, Miranol Ultra. Mix until smooth.
9. Adjust pH with NaOH (18%) to 6.1-6.5.

SOURCE: B.F. Goodrich Co.: Formulation C0074

European Style Bath GelIngredients:

	Wt%
Water	54.9
Tetrasodium EDTA	0.1
Sodium Laureth Sulfate (28% 2M. E.O.)	25.0
Cocamidopropylamine Oxide (Aminoxid WS 35)	8.0
PEG-18 Glyceryl Oleate/Cocoate (Antil 171)	1.3
Jojoba Oil	0.2
PEG-20 Glyceryl Stearate (Tagat S2)	1.0
Citric Acid	to pH 6.0
Natural Extracts	0.5
Fragrance	Q.S.
Preservative	Q.S.
Color	Q.S.
Cocamidopropyl Betaine (Tego Betaine F)	9.0
Sodium Chloride (25% Solution)	Q.S.

Procedure:

1. Dissolve the Tetrasodium EDTA in the water.
2. Add ingredients in order, mixing between additions. Avoid air entrapment.
3. Slowly mix in the PEG-18 Glyceryl Oleate/Cocoate.
4. Add the Cocamidopropyl Betaine.
5. Adjust viscosity with the 25% solution of Sodium Chloride.

NOTE: For a pearlized formula substitute the following for part of the water:

Cocamidopropyl Betaine (and) Glycol Distearate (and)	
Cocamide MEA (and) Cocamide DEA (Tego Pearl B-48)	3.00%

Blooming Emollient Bath Oil

This is a quick blooming bath that will accept a high fragrance loading. The Dimethicone Copolyol and PEG-25 Glyceryl Trioleate contribute substantially to the emolliency and are major factors in blooming effect.

Ingredients:

	Wt%
Dimethicone Copolyol (Abil B 8852)	10.00
PEG-25 Glyceryl Trioleate (Tagat T0)	13.00
Avocado Oil	20.00
Mineral Oil	40.00
Caprylic/Capric Triglycerides (Tegosoft CT)	10.00
Isopropyl Myristate (Tegosoft M)	7.00

Procedure:

Add the ingredients in order. Mix well between additions.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Exfoliating Body Scrub

This mild gently foaming body scrub includes jojoba beads to exfoliate and cleanse, leaving the skin feeling smoother.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
Deionized Water	54.88
Acrylates/C10-30 Alkyl Acrylate Crosspolymer/ Carbopol ETD 2020	1.10
Triethanolamine (99%)	0.10
Disodium EDTA/Versene NA	0.05
Part B:	
Propylene Glycol	1.50
Diazolidinyl Urea, Propylene Glycol, Methylparaben, Propylparaben/Germaben II	1.20
Part C:	
Disodium Laureth Sulfosuccinate/Mackanate EL	13.00
Disodium Dimethicone Copolyol Sulfosuccinate/ Mackanate DC-30	5.00
Polysorbate 20/Tween 20	1.50
Cocamidopropyl Betaine/Incronam 30	3.00
Sodium Lauryl Ether Sulfate 1 (3 mole, 30%)/ Standapol ES-3	4.00
Part D:	
Triethanolamine (99%)	1.45
Fragrance/99411 Fruit Blend	0.22
Hydrogenated Jojoba Oil/Gypsy Rose Florabeads	3.00

Properties:

Appearance: Bright red gel
 pH: 6.0-6.5
 Viscosity (cP): 7,200-8,200
 Yield Value (dynes/cm²): 300-350
 Clarity (%T): 50-60

Preparation Procedure:

1. Disperse Carbopol ETD 2020 polymer in deionized water and allow to hydrate.
2. Partially neutralize the dispersion with TEA in Part A; mix until homogeneous.
3. Add disodium EDTA and mix until homogeneous.
4. Combine ingredients in Part B, and add to Part A; mix until homogeneous.
5. Add the surfactants in Part C individually to Part A/B with slow continuous mixing.
6. Add the TEA in Part D to complete the neutralization; mix until homogeneous.
7. Add the remaining ingredients individually with continuous, slow mixing.

SOURCE: B.F. Goodrich Co.: Formulation C0063

Foaming Bath Oil

A mild and rich-foaming bath additive, ideal as a fragrance vehicle

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Demineralized Water	58.7
	Na4EDTA	0.2
	Imidazolidinyl Urea/Germall 115	0.2
	Ammonium Cocoyl Isethionate/Jordapon ACI-30G	13.3
	Methyl Paraben	0.2
	Ammonium Laureth Sulfate/Alfonic 1412-A	16.7
	Cocamidopropyl Betaine/Mafo CAB	5.7
	Cocamide DEA/Mazamide JT-128	2.0
B	PEG-7 Glyceryl Cocoate/Macol 159	3.0
	Fragrance	Q.S.
C	Citric Acid	Q.S.
	Ammonium Chloride	Q.S.

pH: 6.5-7.0

Appearance: Clear, straw-colored liquid

Procedure:

Add the part A ingredients in order to the main vessel, mixing until uniform. Premix the part B components and add to the main mix. When clear and uniform, adjust pH and viscosity with part C ingredients.

Formulation E-105

Foaming Bath Oil

An easily-fragranced soluble bath oil, which also provides foaming.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Demineralized Water	65.4
	Na4EDTA	0.2
	Imidazolidinyl Urea/Germall 115	0.2
	Ammonium Cocoyl Isethionate/Jordapon ACI-30 G	12.0
	Methyl Paraben	0.2
	Cocamidopropyl Amine Oxide/Mazox CAPA	2.0
B	Polysorbate 20/T-Max 20	20.0
	Fragrance	Q.S.
C	Citric Acid	Q.S.
	Ammonium Chloride	Q.S.

pH: 6.5-7.0

Appearance: Clear, straw-colored liquid

Procedure:

Add the part A ingredients in order to the main vessel, mixing until uniform. Premix the part B components and add to the main mix. When clear and uniform, adjust pH and viscosity with Part C ingredients.

Formulation E-106

SOURCE: PPG Industries, Inc.: Suggested Formulations

Gentle Body Wash

<u>Ingredients:</u>	<u>Wt%</u>
Water	22.3
Monafax MAP-230	25.0
Sodium Laureth-2 Sulfate	38.5
Monatonic CLV	13.2
Cerasynt IP	1.0

Procedure:

Blend in order listed, heat to 65C and mix sufficiently. Stir cool until pearl develops. Add fragrance, color, preservative, and package.

Appearance: White pearled liquid

pH: 7.5

Solids: 26%

Viscosity: 8,000 cp

Formulation F-678

Economical Body Wash

<u>Ingredients:</u>	<u>Wt%</u>
Water	80
Monatonic 779	15
Monafax MAP-230	5

Procedure:

Blend in order listed at room temperature, adjust to pH 6.5-7.0, add fragrance, color, preservative and package.

Appearance: Clear liquid

Solids: 17%

Viscosity: 2,425 cp

Formulation F-679

Clear Body Wash

<u>Ingredients:</u>	<u>Wt%</u>
Water	19.8
Ammonium Laureth (1) Sulfate (26%)	57.7
Monafax MAP-230	12.5
Plantaren 2000	10.0

Procedure:

Blend in order listed. Adjust pH to 6.5 with 50% citric acid. Add fragrance, color, preservative, and package.

Appearance: Clear viscous liquid

Viscosity: 12,500 cP

Solids: 25%

Formula F-681

SOURCE: Mona Industries, Inc.: Suggested Formulations

Low Cost Body Wash

A rich, high foaming, oil-free body wash which cleanses while leaving the skin with a soft smooth feel.

<u>Sequence:</u>	<u>Raw Material/INCI Name:</u>	<u>Wt%</u>
1	Deionized Water	68.45
1	Uniphen P-23	0.30
2	Keltrol/Xanthan Gum	0.25
3	Liponic EG-1/Glycereth-26	0.75
4	Lipo Stearic Acid	2.00
4	Lipopeg 4-S/PEG-8 Stearate	1.50
4	Lipocol L-4/Laureth-4	1.00
4	Liponate NPGC-2	1.00
4	Lipopeg 6000 DS/PEG-150 Distearate	0.50
5	Plantaren PS-100	20.00
5	Standamid LD/Lauramide DEA	3.00
6	Deionized Water	1.00
6	Unicide U-13/Imidazolidinyl Urea	0.25

Procedure:

1. Heat Sequence #1 to 78C on overhead mixer at medium/high speed.
2. Slowly add Sequence #2 to Sequence #1 with medium/high speed mixing until completely hydrated. Hold temperature at 78C.
3. Add Sequence #3 at medium/high speed.
4. Heat premixed Sequence #4 to 80C until clear and add to main batch at medium/high speed. Cool to 65C.
5. At 65C, add Sequence #5 ingredients in order of addition while mixing at medium/low speed. Cool to 35C.
6. At 35C, add premixed Sequence #6 at medium/low speed.

Specifications:

pH: 6.7+-0.2

Viscosity: LVT #4 @ 12 rpm = 23,750 +-10%

SOURCE: Lipo Chemicals Inc.: Formulation No. 977

Mild Bubble Bath

<u>Ingredients:</u>	<u>Wt%</u>
Bio-Terge AS-40	20.0
Alpha-Step MC-48	5.0
Ninol LMP	3.0
Tetrasodium EDTA	0.2
Citric acid	Q.S.
Sodium Chloride	Q.S.
D.I. water	Q.S. to 100.0

Mixing Procedure:

Heat water to 50-60C. Add first two components and EDTA, mixing well after each addition. Add LMP, mixing until clear. Cool to 25C. Adjust pH to 6.0-7.0 with Citric Acid. Add fragrance, dye and preservative as desired. Adjust to desired viscosity with Sodium Chloride.

Typical Properties:

Appearance: Clear, liquid

Viscosity: 200 cps @ 1.5% sodium chloride

1100 cps @ 2.0% sodium chloride

Comment:

Stable for 3 weeks at 42C, 2 months at 25C, and through 3 freeze/thaw cycles.

SOURCE: Stepan Co.: Formulation No. 583

After Bath Talc

<u>No.</u>	<u>Phase</u>	<u>Ingredient:</u>	<u>Wt%</u>
1	A	Talc	92.50
2	B	Perfume Oil	5.00
3	B	PPG-20 Methyl glucose ether	1.50
4	B	Oils of Aloha Macadamia Nut Oil	1.00

Manufacturing Procedure:

Phase A: Hold on side.

Phase B: Combine all ingredients and when uniform, blend into Phase A (talc.).

Here the Oils of Aloha Macadamia Nut Oil helps the talc spread and cuts down on the dry feeling of the skin. Leaves a nice smooth feel.

SOURCE: Oils of Aloha: Suggested Formulation

Milk Bath GelIngredients:

	Wt%
Water	42.6
Kelzan S	0.4
Sodium Laureth Sulfate (26%)	35.0
Sodium Lauryl Sulfate (28%)	10.0
Monalac MAB	5.0
Monalac MPL	2.0
Monalac MO	2.0
Sodium Chloride	1.0
Monalac ML	2.0

Procedure:

Blend ingredients in the order listed while heating to 60C. Stir cool to 40C, add fragrance, color and preservative as needed. Adjust pH to 6.0-6.5.

Appearance: White Lotion

Viscosity: 18,000 cP

Formulation F-690

Body Wash for Sensitive SkinIngredients:

	Wt%
Monafax MAP 230	32.25
SLES (2) (26%)	49.50
Monateric CLV	17.00
Cerasynt IP	1.25

Procedure:

Blend ingredients; heat to 70C. Stir cool to 40C. Add fragrance, color and preservative as required.

Physical Properties:

Appearance: Pearled Lotion

Viscosity: 4,000 cP

Formulation F-692

SOURCE: Mona Industries, Inc.: Suggested Formulations

Milk Enriched Bath and Shower Cleanser (Clear)-B

<u>Raw Material:</u>	<u>Wt%</u>
Water	46.0
Sodium Laureth (2) Sulfate (25%)	35.0
Monalac MPL	2.0
Monalac MO	2.0
Monateric COAB	10.0
Monalac MAB	5.0

Procedure:

Add in the order listed and adjust pH to 6.0

Physical Properties:

Appearance: Clear liquid

Viscosity at 25C (cP): 96,000

Milk Enriched Bath and Shower Cleanser (Clear)-C

<u>Raw Material:</u>	<u>Wt%</u>
Water	45.0
Sodium Laureth (2) Sulfate (25%)	35.0
Monalac MPL	2.0
Monalac MO	2.0
Fragrance	1.0
Monateric COAB	10.0
Monalac MAB	5.0

Procedure:

Add in the order listed and adjust pH to 6.0

Physical Properties:

Appearance: Clear liquid

Viscosity at 25C (cP): 97,000

Milk Enriched Bath and Shower Cleanser (Clear)-D

<u>Raw Material:</u>	<u>Wt%</u>
Water	44.5
Sodium Laureth (2) Sulfate (25%)	35.0
Monalac MPL	2.0
Monalac MO	2.0
Sodium Chloride	0.5
Fragrance	1.0
Monateric COAB	10.0
Monateric MAB	5.0

Procedure:

Add in the order listed and adjust pH to 6.0

Physical Properties:

Appearance: Clear liquid

Viscosity at 25C (cP): 8,000

SOURCE: Mona Industries, Inc.: Formulation F-715

Milk Enriched Bath and Shower Cleanser (Clear)-E

<u>Raw Material:</u>	<u>Wt%</u>
Water	40.5
Sodium Laureth (2) Sulfate (25%)	35.0
Monalac MPL	2.0
Monalac MO	2.0
Sodium Chloride	0.5
Fragrance	1.0
Monateric COAB	10.0
Monalac MAB	5.0
Monasil PLN	4.0

Procedure:

Add in the order listed and adjust pH to 6.0

Physical Properties:

Clear liquid

Viscosity at 25C (cP): 5,600

Formulation F-715

Milk Enriched Bath and Shower Cleanser (Clear)

<u>Raw Material:</u>	<u>Wt%</u>
Water	44.5
Sodium Laureth (2) Sulfate (25%)	35.0
Monalac MPL	2.0
Monalac MO	2.0
Sodium Chloride	0.5
Fragrance	1.0
Monateric COAB	10.0
Monalac MAB	5.0

Procedure:

Add in the order listed and adjust pH to 6.5 to 7.5.

Physical Properties:

Appearance: Clear liquid

Viscosity at 25C (cP): 8,000 to 50,000 varies with pH & %
fragrance

Formulation F-718

SOURCE: Mona Industries, Inc.: Suggested Formulations

Milk Enriched Body Cleanser

This viscous high foaming formulation utilizes the foam stabilization, mild cleansing and conditioning properties of Monalac MO.

<u>Ingredient:</u>	<u>Wt%</u>
Water	22.0
Sodium Laureth (2) Sulfate (28%)	40.0
Sodium Lauryl Sulfate (30%)	25.0
Monalac MO	10.0
Monalac MPL	2.0
Sodium Chloride	1.0

Adjust the pH to 5.5.

Features of Monalac MO:

- Lather and foam enhancement
- Extra conditioning for skin and hair
- Excellent viscosity building properties
- Contributes gentle cleansing
- Low irritation potential
- Cationic at acidic pH

Gel Conditioning Body Cleanser

This high foaming conditioning formulation provides gentle and thorough cleansing, while imparting a soft, smooth and clean after-feel.

<u>Ingredient:</u>	<u>Wt%</u>
Water	55.0
Sodium Chloride	1.0
Sodium Laureth (2) Sulfate (25%)	35.0
Monalac MAB	5.0
Monalac MPL	2.0
Monamid CMA	2.0

Adjust the pH to 6.0

Appearance: Clear viscous liquid

Viscosity at 25C: 51000 cP

Solids (%): 14

Features of Monolac MAB:

- Effective conditioning to skin and hair
- Provides mild cleansing
- High foaming primary surfactant
- Excellent viscosity building properties
- Anti-irritant for anionics and cationics
- Compatible with all surfactant types

SOURCE: Mona Industries, Inc.: Suggested Formulations

Moisturizing Shower Lotion

This shower lotion is based on a mild cleansing system thickened by Glucamate DOE-120. Cremerol HMG and Glucam E-20 are incorporated for moisturization and humectance. Promulgen D provides creaminess. Ucare Polymer JR-30M is added for long-lasting conditioned skin feel.

<u>Ingredients:</u>	<u>Wt%</u>
Texapon NSO (Sodium Laureth Sulfate)	20.00
Dehyton K (Cocamidopropyl Betaine)	15.00
Ucare Polymer JR-30M (Polyquaternium-10)	0.10
Deionized Water	60.05
Promulgen D (Cetearyl Alcohol and Ceteareth-20)	1.00
Glucam E-20 (Methyl Gluceth-20)	1.00
Glucamate DOE-120 (PEG-120 Methyl Glucose Dioleate)	1.50
Cremerol HMG (Hydroxylated Milk Glycerides)	1.00
Timiron MP-1001 Supersheen (Mica and Titanium Dioxide)	0.35
Triethanolamine	q.s.
Preservative and Fragrance	q.s.

Procedure:

Heat half of the water to 75C and add Promulgen D. Disperse the Ucare Polymer JR-30M in the other half while heating to 45-50C. Add Glucamate DOE-120 and Cremerol HMG to the Ucare solution. Once a uniform solution has formed, add to the Promulgen solution with gentle agitation. Add remaining ingredients, mixing until uniform. Cool to 35C while stirring. Adjust pH to 6.5. Package.

Performance Data:

Viscosity: 23,500 cps (20C, LVT, 4, 12 rpm)
pH: 6.5

SOURCE: Amerchol: Formulation E931-063-5

Moisturizing Self-Emulsifying Bath Oil (With AHA-Ester)

<u>Raw Materials:</u>	<u>Wt%</u>
Imwitor 380 (Glyceryl Cocoate/Citrate/Lactate)	13.00
Miglyol 812 (Caprylic/Capric Triglyceride)	18.00
Miglyol 840 (Propylene Glycol Dicaprylate/Dicaprate)	25.00
Softisan 645 (Bis-Diglyceryl Polyacyladipate-1)	10.00
Softigen 767 (PEG-6 Caprylic/Capric Glycerides)	10.00
Mineral Oil	22.00
Aloe Vera Lipo Quinone Extract (Aloe Vera)	2.00
Color	q.s.
Fragrance	q.s.

Preparation:

All ingredients are mixed together and stirred until homogeneous.

SOURCE: Creanova Inc.: Formulation 5.2A (3)

Moisturizing Shower Lotion

This shower lotion is based on a mild cleansing system thickened by Glucamate DOE-120. Cremerol HMG and Glucam E-20 are incorporated for moisturization and humectance. Promulgen D provides creaminess. Ucare Polymer JR-30M is added for long-lasting conditioned skin feel.

Viscosity: 23,500 cps pH: 6.5

Ingredients:

	Wt%
Texapon NSO (Sodium Laureth Sulfate)	20.00
Dehyton K (Cocamidopropyl Betaine)	15.00
Ucare Polymer JR-30M (Polyquaternium-10)	0.10
Deionized Water	60.05
Promulgen D (Cetearyl Alcohol (and) Ceteareth-20)	1.00
Glucam E-20 (Methyl Gluceth-20)	1.00
Glucamate DOE-120 (PEG-120 Methyl Glucose Dioleate)	1.50
Cremerol HMG (Hydroxylated Milk Glycerides)	1.00
Timiron MP-1001 Supersheen (Mica (and) Titanium Dioxide)	0.35
Triethanolamine	q.s.
Fragrance and Preservative	q.s.

Procedure:

Heat half of the water to 75C and add Promulgen D. Disperse the Ucare Polymer JR-30M in the other half while heating to 45-50C. Add Glucamate DOE-120 and Cremerol HMG to the Ucare solution. Once a uniform solution has formed, add to the Promulgen solution with gentle agitation. Add remaining ingredients, mixing until uniform. Cool to 35C while stirring. Adjust pH to 6.5.

Note: Texapon NSO is 28% active, max. 0.6% salt; Dehyton K is 30% active, 4.5 to 5.5% salt.

Shower Gel with Low Washing Active Solids

Alkyl polyglucose functions as the primary surfactant in this shower gel which has low washing active solids (WAS). Ucare Polymer LK has been selected to provide protective conditioning. Glucam E-20 is used for emollience and humectance. This low WAS shower gel is intended for sensitive or dry skin. It cleanses gently and provides a soft, conditioned feel to skin.

Viscosity: 5,300 cps pH: 6.5

Ingredients:

	Wt%
Texapon NSO (Sodium Laureth Sulfate)	4.00
Plantaren 1200 (Lauryl Polyglucose)	10.00
Euperlan PK 3000-AM (Glycol Distearate (and) Laureth-4 (and) Cocamidopropyl Betaine)	1.00
Glucamate DOE-120 (PEG-120 Methyl Glucose Dioleate)	0.75
Deionized Water	83.15
Glucam E-20 (Methyl Gluceth-20)	1.00
Ucare Polymer LK (Polyquaternium-10)	0.10
Preservative and Fragrance	q.s.

Procedure:

Disperse Ucare Polymer LK in the water with gentle heating (45-50C). Add Glucam DOE-120. Stop heating. Add surfactants. Add Glucam E-20. Add preservative and fragrance. Adjust pH.

SOURCE: Amerchol: Formulations E931-063-5 & E942-021-15

Opacified Bath & Shower Liquid

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Deionized Water	40.0
A	Sodium Chloride	1.0
A	Sodium Lauryl Sulfate (30%)	10.0
A	Monalac MPL	2.0
A	Monalac MO	2.0
A	Sodium Laureth (2) Sulfate (26%)	35.0
A	Monalac MAB	5.0
B	Deionized Water	4.0
B	Esi-Cryl 11 Styrene-Acrylic Copolymer	1.0

Procedure:

Add in the order listed. Mix Part B well before adding to Part A. Adjust the pH to 6.0-6.5 and add desired preservatives, fragrances, etc.

Physical Properties:

Appearance: Opaque White Liquid
 Viscosity at 25C: 12,000 cps
 Formulation F-693

Opacified Bath & Shower Liquid Gel

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Deionized Water	30.0
A	Sodium Chloride	1.0
A	Sodium Lauryl Sulfate (30%)	20.0
A	Monalac MPL	2.0
A	Monalac MO	2.0
A	Sodium Laureth (2) Sulfate (26%)	35.0
A	Monalac MAB	5.0
B	Deionized Water	4.0
B	Esi-Cryl 11 Styrene-Acrylic Copolymer	1.0

Procedure:

Add in the order listed. Mix Part B well before adding to Part A. Adjust the pH to 6.0-6.5 and add desired preservatives, fragrances, etc.

Physical Properties:

Appearance: Opaque White Liquid Gel
 Viscosity at 25C: 80,000 cps
 Formulation F-694

SOURCE: Mona Industries, Inc.: Suggested Formulations

Pearlized Bath Salts
Yellow Green

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Coarse Salt Crystals	99.00
Mica (and) Titanium Dioxide/Timiron Super Green	0.999
FD&C Blue #1 Aluminum Lake C39-4433	0.001
Phase B:	
PVP/VA Copolymer/Luviskol VA641	0.40
Isopropanol	3.60
Fragrance	q.s.

Procedure:

Combine Phase A with gentle tumbling agitation. Combine Phase B. When homogeneous, spray onto Phase A with continuous tumbling agitation. Evaporate solvent via vacuum or tray drying.
 Formula SD2-13-5

Pearlized Bath Salts
Sea Green

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Coarse Salt Crystals	99.00
Mica (and) Titanium Dioxide/Timiron Super Green	0.99
FD&C Blue #1 Aluminum Lake C39-4433	0.01
Phase B:	
PVP/VA Copolymer/Luviskol VA641	0.40
Isopropanol	3.60
Fragrance	q.s.

Procedure:

Combine Phase A with gentle tumbling agitation. Combine Phase B. When homogeneous, spray onto Phase A with continuous tumbling agitation. Evaporate solvent via vacuum or tray drying.
 Formula SD2-13-4

SOURCE: Rona/EM Industries, Inc.: Suggested Formulations

Shower and Bath Gel

<u>Ingredients:</u>	<u>Wt%</u>
A) Ammonium Lauryl Sulfate (1) (28.0% active)	28.5
Cocoamidopropyl Betaine (2) (35.0% active)	7.1
Polyquaternium-7 (3) (0.8% active)	4.0
Arlatone MAP Concentrate (4)	2.5
Water	q.s.
B) Sodium Chloride	0.5
C) 50% Potassium Hydroxide	q.s. to pH 7.0
D) Germaben II	q.s.

Preparation:

- *Stir (A), at room temperature, until the mixture is uniform.
- *Add (B) to (A) with moderate stirring.
- *Adjust the pH with (C).
- *Add (D).

Features:

- *Lubricious lather
- *Excellent cleansing
- *Smooth after feel
- *Amide free

(1) Stepanol AM (Stepan), Tego Betain L-7 (Goldschmidt), Flocare C107 (SNF Floerger), C9-15 Alkyl Phosphate

Viscosity: 11,100 cPs (Brookfield LVT, spindle 4, 30 rpm)

Stability: 21.0C (70F): 1 week
 35.0C (95F): 1 week
 46.0C (115F): 1 week

F/T: 4 freeze/thaw cycles.

SOURCE: ICI Surfactants: Formulation CP1233

Shower GelRaw Materials:

	Wt%
A: Acylglutamate CS-22	80.0
Cocamide DEA	5.0
Butylene glycol	3.0
Sodium benzedrine	0.2
Methyl paraben	0.2
Water	balance
B: Hydroxypropyl cellulose	1.2
C: Fragrance	q.s.

Procedure

Dissolve (A) at 70-80C with stirring. Cool (A) to 50-60C and disperse/dissolve (B) and (C) in (A). Cool to room temperature.

pH: 6.8

Viscosity: 3960 mPa.s at 25C

Formula CSB-02

Shower GelRaw Materials:

	Wt%
A: Acylglutamate CK-11	20.0
Tween-20	1.0
Cocamide DEA	3.0
1,3-Butylene glycol	4.0
KOH	1.4
Methylparaben	0.2
Water	balance
B: Hydroxypropyl cellulose	1.0

pH: 6.5

Viscosity: 1000 mPa.s

Procedure:

Dissolve (A) ingredients at 70-80C. Add (B) with stirring to (A) and cool down immediately. Cool to 30C.

Formula CK-B-003

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Shower Gel

This mild shower gel has good viscosity and foaming properties and leaves a velvety feel on the skin. Velsan P8-3 liquid is a water soluble emollient ester with a silky dry emolliency that is non-greasy. Sandopan DTC acid liquid is a multi-functional surfactant that can increase cationic deposition if a cationic conditioner is used. It also acts as a hydrotrope and performs well in hard water. Sandopan DTC acid liquid and Sandobet SC liquid are both very mild surfactants.

<u>Ingredients:</u>	<u>Wt%</u>
Standapol ES-3	46.40
Sandobet SC liquid	10.00
Sandopan DTC acid liquid	5.60
Lauramide DEA	3.30
Velsan P8-3 liquid	2.00
Glucamate DOE 120	1.70
Germaben II	1.00
Versene NA	0.10
Deionized Water	qs

Procedure:

Hydrate Glucamate DOE 120 and Versene NA in all of the Deionized water. In a separate vessel, add remaining ingredients in order. Combine the two phases and adjust pH to 6.0.

Properties:

pH: 6.0

Appearance: Clear, slightly yellow, viscous gel

Viscosity: 8,500 cps (Brookfield LVT viscometer, Spindle #3, 6 rpm)

Ref: CL30-3: CHS-52

Water White Shower Gel

Adds a velvety feel to the skin. This crystal clear shower gel has good viscosity and foaming characteristics.

<u>Ingredients:</u>	<u>Wt%</u>
Standapol ES-3	41.25
Sandopan DTC acid	10.00
Lauramide DEA	3.30
Velsan P8-3 liquid	2.00
Glucamate DOE-120	1.70
Germaben II	1.00
Versene NA	0.10
Fragrance	qs
Deionized Water	40.70 qs

Procedure:

Hydrate Glucamate DOE-120 and Versene NA in all of the Deionized Water. In a separate vessel, add the remaining ingredients in order mixing well after each addition. Combine the two phases and mix well. Adjust pH=6.0.

Properties:

pH: 6.0

Viscosity: 8500 cps

% Solids: 29

REF: CL30-3: CHS-51

SOURCE: Clariant Corp.: Suggested Formulations

2 in 1 Creamy Body Wash

<u>Ingredients:</u>		<u>Wt%</u>
A) Arlatone DUO		20.0
Water		69.5
Xanthan Gum (1)		0.1
B) Water		5.0
Triethanolamine		0.6
C) Arlatone MAP Concentrate (2)		2.5
D) Dimethicone (3)		2.0
E) Quaternium-15 (4)		q.s.

Preparation:

- *Heat water to 80-85C, disperse xanthan gum and the Arlatone DUO with moderate agitation while maintaining temperature above 80C.
- *Heat and stir (B) to 80C.
- *Add (C) to (B) slowly with good agitation maintaining 80C until clear.
- *Add (B/C) at 50C to (A) at 50C with moderate stirring.
- *Add (D) and (E) to (A/B/C) mixture below 40C with moderate stirring.
- *Stir to room temperature and add any water lost due to evaporation.

Features:

- *Feels good during washing
 - *Moisturizing after feel
 - *Excellent cleansing
- (1) Keltrol (Kelco), C9-15 Alkyl Phosphate, (3) Dow Corning 200 Fluid (Dow Corning), (4) Dowicil 200 (Dow Corning)

SOURCE: ICI Surfactants: Formula CP1231

Section IV

Beauty Aids

AHA-Clarifying Face Mask**Formula Profile:**

Veegum F is used in this face mask. This formulation is for all skin types and takes advantage of the absorbing and cleansing properties of purified Bentonite. This formula contains humectants that will improve the residual skin feel. The surfactant aids in the rinsability of the dried mask.

Ingredients:

	Wt%
A: Water	44.75
Veegum F (Magnesium Aluminum Silicate)	7.0
B: Glycerin	5.0
Butylene Glycol	3.0
Vanclay (Kaolin)	20.0
Talc (Cosmetic Grade)	5.0
Vanseal NALS-30 (Sodium Lauroyl Sarcosinate)	5.0
C: Preservative	qs
D: Glycolic Acid	7.0
E: Fragrance	qs
F: Triethanolamine	3.25
Citric Acid	Adjust pH to 3.7+-0.2
	qs

Procedure:

Step 1: Sift Veegum F into an established vortex in water. Veegum F will need approximately 60 minutes for hydration using a homogenizer or up to 3 hours using a prop mixer. Additional energy, such as an increase in mixing intensity or water temperature, will reduce hydration time. The addition of any other ingredients during the hydration process will interfere with the hydration of Veegum F and will reduce or even eliminate the desired properties generated by the Magnesium Aluminum Silicate.

Step 2: Add remaining water phase ingredients listed in Part B.

Step 3: Add Part C-Preservative.

Step 4: Add Part D-AHA-Glycolic Acid.

Step 5: Add Part E-Fragrance.

Step 6: Adjust pH to 3.7 with Part F.

Product Specifications:

Viscosity: Brookfield LVT DVII Spindle #TF @ 0.3 RPM: 1,000,000+-
100,000 cps

pH: 3.5-3.9

This formula produces a stable product that passes 3 month stability testing at RT, 5C, 38C, 50C and 3 cycle F/T.

SOURCE: R.T. Vanderbilt Co., Inc.; Formula No. 471

Aloe Vera Gel Moisturizer

This clear aloe vera gel, thickened with Carbopol ETD 2020, is an excellent gel for soothing sunburn and other skin irritations and may promote healing.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
Deionized Water	88.20
Acrylates/C10-30 Alkyl Acrylate Crosspolymer/Carbopol ETD 2020	0.80
DMDM Hydantoin/Glydant	0.30
Sodium Hydroxide (18%)	0.60
Part B:	
Deionized Water	5.00
Dimethicone Copolyol Wax/Silwax WS	1.00
Disodium EDTA/Versene NA	0.20
Aloe Vera Gel (40:1)/Aloe Vera Gel DC 40	2.50
Sodium Hydroxide (18%)	1.00
D&C Green No. 8 (1.0%)	0.20
D&C Green No. 5 (0.1%)	0.20

Properties:

Appearance: Thick, brilliant green gel
 pH: 7.0-7.5
 Viscosity (cP): 45,000-60,000
 Clarity (%T): 75-82

Preparation Procedure:**Part A:**

1. Disperse Carbopol ETD 2020 polymer in deionized water (20-50C). Mix until polymer is dispersed.
2. Add Glydant.
3. Partially neutralize Carbopol and water mixture with NaOH. Mix until smooth.

Part B:

1. In a side vessel, heat water to 50-55C, add Silwax WS (pre-melt). Mix until well dispersed.
2. Dissolve disodium EDTA in mixture.
3. Add aloe (40:1) to mixture.
4. Add NaOH (18%) to mixture.
5. When mixture is uniform, add Part B to Part A. Mix until uniform.
6. Add desired color.
7. Adjust final pH to 6.5-7.0 with sodium hydroxide (18%) for optimum clarity.

SOURCE: B.F. Goodrich Co.; Formulation C0062

Amphoteric Facial Cleanser

<u>Ingredients:</u>	<u>Wt%</u>
Water	85.95
Tetrasodium EDTA	0.10
Citric Acid (25% Solution)	to pH 6.0
Dimethicone Propyl-PG Betaine (Abil B 9950)	1.25
Caprylamido/Capramidopropyl Betaine (Tego Betaine 810)	7.50
Propylene Glycol	2.00
Butylene Glycol	2.00
PEG-7 Glyceryl Cocoate (Tegosoft GC)	0.75
Sodium Lactate (and) Sodium PCA (and) Glycine (and) Fructose (and) Urea (and) Niacinamide (and) Inositol (and) Sodium Benzoate (and) Lactic Acid (Lactil)	0.45
Preservatives	Q.S.
Color	Q.S.
Fragrance	Q.S.

Procedure:

Mix ingredients in order given.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulation

O/W-Moisturizing Milk

<u>Raw Materials:</u>	<u>Wt%</u>
A: Hostaphat KL 340 N (Trilaureth-4 Phosphate)	1.00
Hostacerin DGS (Polyglyceryl-2 PEG-4 Stearate)	4.00
Mineral oil, low viscosity	3.00
Cetiol V (Decyl Oleate)	4.00
Walnut oil	4.00
Isopropyl isostearate	4.00
Antioxidant	q.s.
B: Carbopol 980 (Carbomer)	0.30
C: Aquamollin BC pdr.h.c. (Ethylene Diamine Tetra-acetic Acid Sodium Salt)	0.10
Citric acid (10%)	0.25
Glycerin	3.00
Caustic soda solution (10%)	1.20
Water	69.85
Preservative	q.s.
D: Collagen KD	5.00
Fragrance	0.30

Procedure:

1. Melt A at ca. 70C, then add B.
2. Heat C to ca. 70C.
3. Stir 2 into 1 and stir until cool.
4. At ca. 35C add the components of D to 3.
5. Homogenize the emulsion.

SOURCE: Hoechst Aktiengesellschaft: Formula A VI/3015

Anhydrous Deep Penetrating Vitamin Gel**Formulating Design and Advantages:**

Light, smooth, and quick penetrating best describes this gel. Use of this gel will diminish the signs of aging by conditioning and treating the skin with anti-inflammatory agents. The activity comes from phytosterol and bioflavonides in Deodorized Orange Wax. This class of chemicals is also a strong anti-oxidant which will scavenge free radical thereby preventing potential premature aging.

<u>Raw Materials:</u>	<u>Wt%</u>
Silicone Oil 556	56.0
Isopropyl Palmitate	5.0
Fitoderm-Vegetal Squalane	10.0
Hexanediol Behenyl Beeswax	14.0
Rice Bran Oil	2.0
Deodorized Orange Wax	10.0
Vitamin A Palmitate	0.5
Vitamin E	0.5
K80-D22	2.0

Procedure:

Melt and mix all components to 75C, cool to 60C and pour into container.

Adaptation of Formula and Its Influence on the Product:

Different oils may be used, the gel consistency can be regulated by changing the concentration of K80-D22 according to the desired result.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Gel with Thiosome (P)

<u>Raw Materials:</u>	<u>Wt%</u>
a) Hispagel 200	20.00
Keltrol, 1% aqueous solution	30.00
Water, distilled	40.70
Phenonip	0.30
Cetiol J 600	4.00
b) Thiosome (P)	5.00

Manufacture:

- a) Mix well at room temperature;
- b) Stir in.
 Perfume

SOURCE: Chemisches Laboratorium Dr. Kurt Richter GmbH: Formula

Blackstar Eye Shadow

INCI Name/Trade Name:	Wt%
Phase A:	
Talc/Supra A	25.70
Lithium Stearate	2.50
Kaolin 2457	5.00
Calcium Silicate/Microcel E	0.50
Bismuth Oxychloride/Biron B-50	3.00
Methyl Paraben	0.20
Propyl Paraben	0.10

Phase B:	
Iron Oxides (and) Mica/Colorona Blackstar Colors	50.00

Phase C:	
Mineral Oil (and) Lanolin Alcohol/Amerchol L-101	11.00
Lanolin Alcohol/Super Hartolan	1.00
White Petrolatum	1.00

Procedure:

Combine Phase A. Pulverize with a hammer mill, passing twice through a 0.027" herring bone screen. Add Phase B with gentle agitation. Combine Phase C. Heat to 70C. Spray onto batch while agitating bulk. Pass entire batch through a jump gap, Formula AS1-3

Eye Shadow with Timiron MP-60, MP-65

INCI Name/Trade Name:	Wt%
Phase A:	
Talc/Supra A	24.10
Lithium Stearate	2.50
Kaolin 2457	5.00
Calcium Silicate/Microcel E	0.50
Bismuth Oxychloride (and) Carmine/Bicrona Carmine	2.00
Bismuth Oxychloride/Biron B-50	2.60
Methyl Paraben	0.20
Propyl Paraben	0.10

Phase B:	
Mica (and) Iron Oxides (and) Titanium Dioxide/Timiron MP-60, MP-65	50.00

Phase C:	
Mineral Oil (and) Lanolin Alcohol/Amerchol L-101	11.00
Lanolin Alcohol/Super Hartolan	1.00
White Petrolatum	1.00

Procedure:

Combine Phase A. Pulverize with a hammer mill, passing twice through a 0.027" herring bone screen. Add Phase B with gentle agitation. Combine Phase C. Heat to 70C. Spray onto batch while agitating bulk. Pass entire batch through a jump gap.

Formula AS1-5

SOURCE: Rona/EM Industries, Inc.: Suggested Formulations

Body Mask With Liposilt Green

A non-drying body mask for skin cleansing and nourishment. The Liposilt Green is the source of nutrients which yields nourishment and leaves the skin with a smooth soft appearance.

<u>Seq:</u>	<u>Raw Material/INCI Name:</u>	<u>Wt%</u>
1	Deionized Water	37.33
2	Keltrol/Xanthan Gum	0.12
2	Mineral Colloid BP/Montmorillonite	0.10
3	Uniphen P-23	0.60
3	Lipopeg 6000-DS/PEG-150 Distearate	0.05
4	Liposilt Green/Silt	30.00
5	Lipomulse 165/Glyceryl Stearate (and) PEG-100 Stearate	5.00
5	Lipo GMS-450/Glyceryl Stearate	3.00
5	Lipovol SES/Sesame Oil	15.00
6	Kaolin	7.50
7	Deionized Water	1.00
7	Unicide U-13/Imidazoliny Urea	0.30

Procedure:

1. Heat Sequence #1 to 78C using overhead mixer at medium speed.
2. Dry mix Sequence #2, add slowly to Sequence #1 and mix until completely hydrated. Maintain temperature at 78C.
3. Add Sequence #3 in order of addition to batch using overhead mixer at medium speed. Maintain temperature at 78C.
4. Add Sequence #4 to batch under homomixer. Hold temperature 78C.
5. Heat and melt at 80C Sequence #5 and add to batch on homomixer. Switch to sweep blade on overhead mixer and cool to 42C.
6. At 42C add Sequence #6 and mix until thoroughly dispersed. Cool to 35C.
7. At 35C add premixed Sequence #7 to batch and cool to 25C.

Specifications:

pH: 6.0+-0.2

Viscosity: T-D @ 3.0 rpm=36,000 cps+-10%

The enhancement of epidermal cell renewal in formulation has been confirmed.

SOURCE: Lipo Chemicals Inc.: Formulation No. 870

Cleansing Gel
(Wash off type)

<u>Raw Materials:</u>	<u>Wt%</u>
A: Emalex O.T.G.	56.4
Emalex CC-168	5.0
Emalex OD-25 JJ	16.0
Butyl paraben	0.2
B: Glucam E-10	4.0
Glycerin	1.7
Sorbitol (70% aq.)	9.0
Water	7.3
Methyl paraben	0.1
Colorant	q.s.
C: Perfume	0.3

Procedure:

Dissolve (A) and (B) up at 80C and add (B) to (A) gradually. Cool down the mixture with gentle stirring and add perfume at 50C. Cool down to below 45C with stirring.

Note:

This formula produces gel at 45-50C.

If water content reduces by evaporation during production, gel cannot be obtained. Prevent water evaporation or compensate water content in advance.

Formula A-390-18

Make up Remover
(wash off type)

<u>Raw Materials:</u>	<u>Wt%</u>
Acylglutamate CT-12	40.0
Acylglutamate CK-11	8.0
Acylglutamate CA	8.0
Squalane	21.0
Amiter LGOD-5	21.0
Sodium Chloride	1.5
Methyl paraben	0.2
Butyl paraben	0.1
Fragrance	0.2

Procedure:

Dissolve all ingredients (except fragrance) at 80C with stirring. Cool down with gentle stirring. Add fragrance at 40C and continue to cool to room temperature.

Formula No. MRJ-11

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Cleansing Oil

<u>Ingredients:</u>	<u>Wt%</u>
Macadamia Oil	10.0
Vegetable Oil (Panacete 810)	10.0
P.O.E. (30) Sorbitol Tetraoleate	13.0
Vitamin E	0.2
Perfume	q.s.
Mineral Oil-70	56.8

Milk Lotion

<u>Ingredients:</u>	<u>Wt%</u>
A) P.O.E. Sorbitan Monostearate	2.0
Sorbitan Monostearate	1.0
Stearic Acid	2.0
Cetanol	0.25
Polysynlane	7.0
Macadamia Oil	3.0
Butyl Paraben	0.1
B) Glycerin	3.0
Xanthan Gum (2% sol)	10.0
Methyl Paraben	0.1
Dist. Water	71.55
C) Perfume	q.s.

Procedure of Milk Lotion:

1. Heat A and B, up to 80C.
2. Add B to A, and continue to mix until down to around 40C.
3. Add C.

Remarks:

P.O.E. = polyoxyethylene
q.s. = quantum sufficit

A typical prescription example of Polysynlane for cleansing oil and milk lotion. As a facial cleanser Polysynlane is more efficient than general cleansing creams on the market, leaving an appropriate oil base which helps soften the skin.

This milk lotion is designed for dry skin, but is available for normal skin by adjusting the contents of the base oil.

SOURCE: Polyester Corp.; Suggested Formulations

Clear Facial Cleansing Gel

A clear, mild, foaming facial cleanser designed to provide stable suspension of added abrasive articles. The Jordapon ACI-30G provides excellent foaming, gentle cleansing, and a soft, smooth afterfeel on the skin.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	50.00
	Nonoxynol-9/Macol NP-9.5	0.01
	Carbomer/Carbopol 1342	1.00
B	Deionized Water	20.00
	TEA Lauryl Sulfate/Stepanol WAT	3.50
	Methyl Paraben	0.15
	Imidazolidinyl Urea/Germall 115	0.15
	PEG-150 Distearate/Mapeg 6000 DS	0.50
C	Ammonium Cocoyl Isethionate/Jordapon ACI-30G	16.80
	Soyamide DEA/Mazamide SS-10	1.50
	Cocamide DEA/Mazamide JT-128	1.50
	Na4EDTA	0.10
D	Deionized Water	3.39
	Triethanolamine	1.40

pH: 6.3-6.8

Viscosity: Brookfield #4 @ 25C

(shear sensitive) very low shear: 166,000 cps @ 0.3 rpm
 low shear: 56,400 cps @ 1.5 rpm
 medium shear: 21,700 cps @ 6 rpm
 moderate shear: 7,620 cps @ 30 rpm

Appearance: Clear, viscous yellow liquid

Procedure:

Disperse the carbomer in the part A water plus Macol NP-9.5, stirring for about 20 minutes. In a separate vessel, premix the part B ingredients, heating to 65C to dissolve the Mapeg 6000 DS. Add part B to part A with good agitation. Add the part C ingredients in order. Premix the part D ingredients and add to adjust the pH and thicken the product.

SOURCE: PPG Industries, Inc.: Formulation K-107

Concealing Stick**Formulating Design and Advantages:**

This product covers fine facial lines and blemishes naturally, leaving a flexible barrier which also retains moisture and conditions the skin. Cera Bellina (Pg-3 Beeswax) is used as a pigment disperser which makes this formulation easier and thereby avoiding the expense of milling.

Raw Materials:

	<u>Wt%</u>
Phase A:	
Castor Oil	27.3
Petrolatum, White	22.0
Synthetic Candelilla	10.0
Isopropyl Palmitate	6.0
Carnauba Wax	5.0
Deodorized Orange Wax	5.0
Jojoba Wax	4.0
Paraffin Wax 130/135	1.5
Ozokerite 170	1.0
Squalane	1.0
Vitamin E	0.5
Phase B:	
Cera Bellina (Pg-3 Beeswax)	9.0
Titanium Dioxide	5.0
Cosmetic Tan Iron Oxide	1.5
Brown Iron Oxide	0.2
Phase C:	
Liquapar	1.0

Procedure:

Heat and mix Phase B till pigments are evenly dispersed. Weigh Phase A and individually add to Phase B while mixing. Heat A&B till homogeneous, add Phase C, cool and pour at 60C.

Adaptation of Formula and its Influence on the Product:

By reducing the wax concentration this product can be poured into a compact tray. Large variations can be made in wax and oil concentrations that are incorporated in stick products and still produce a similar finished product.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Creamy Liquid Make-Up

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Ceteareth-15 and Glyceryl Stearate (Tego Care 215)	2.20
Cetyl Alcohol (Tego Alkanol 16)	1.75
Stearoxy Dimethicone (Abil Wax 2434)	0.25
Octyl Stearate (Tegosoft OS)	3.00
Octyl Palmitate (Tegosoft OP)	3.00
Isoeicosane	5.00
Caprylic/Capric Triglyceride (Tegosoft CT)	5.00
Phase B:	
Water	60.60
Preservatives	Q.S.
Glycerin	1.00
Butylene Glycol	3.00
Phase C:	
Carbomer 941	0.20
Octyl Palmitate (Tegosoft OP)	0.80
Phase D:	
Titanium Dioxide	9.00
Mica	2.00
Talc	2.00
Iron Oxides	1.20
Phase E:	
Sodium Hydroxide (10%)	to pH 6.0
Fragrance	Q.S.

Procedure:

1. Heat the ingredients of Phase A to 80C. Mix well.
2. Heat the ingredients of Phase B to 80C. Mix well to dissolve preservatives.
3. Add B to A or A to B with mixing. Cool to 60-65C.
4. Continue mixing. Add Phase C.
5. Homogenize.
6. While homogenizing, add pigments.
7. After homogenization, cool to 40-45C with sweep mixing.
8. Adjust pH. Fragrance.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulation

Dark Beige Makeup with Tego Care 450

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Polyglyceryl-3 Methylglucose Distearate (Tego Care 450)	2.0
Almond Oil	2.0
Cyclomethicone	3.5
Cetyl Dimethicone (Abil Wax 9801)	1.0
Caprylic/Capric Triglycerides (Tegosoft CT)	4.0
Iron Oxides	1.5
Titanium Dioxide	6.0
Phase B:	
Glycerin	2.0
Water	76.6
Phase C:	
Carbomer 941	0.2
Isopropyl Palmitate (Tegosoft P)	0.8
Phase D:	
Sodium Hydroxide (10% solution)	0.4
Phase E:	
Preservative	Q.S.
Fragrance	Q.S.

Procedure:

1. Heat the ingredients of Phase A to 80C. Disperse Iron Oxides and Titanium Dioxide into Phase A with sufficient agitation.
2. Heat the ingredients of Phase B to 80C.
3. Add A to B with agitation.
4. Homogenize.
5. Disperse Carbomer into the oil/ester add to A/B. Homogenize.
6. Cool to 35-40C with stirring.
7. Add Phase D/E. Stir.
8. Mix until viscosity profile is obtained.

Facial Cleaner and Toner

<u>Ingredients:</u>	<u>Wt%</u>
Water	83.40
Tetrasodium EDTA	0.10
Aloe	1.00
Allantoin	0.30
PEG-6 Caprylic/Capric Glycerides (Tegosoft GMC 6)	1.50
Caprylamido/Capramidopropyl Betaine (Tego Betaine 810)	3.70
Lactil	2.00
Organic Extracts	2.00
Propylene Glycol	1.00
SDA Alcohol 40	5.00
Preservatives	Q.S.
Color	Q.S.
Fragrance	Q.S.

Procedure:

Mix ingredients in order, mixing until clear.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Deep Extra Body Conditioner**Formulating Design and Advantages:**

This formula utilizes the gelling properties of the Hexanediol Behenyl Beeswax in a silicone oil and the conditioning effects of Bee's Milk.

<u>Raw Materials:</u>	<u>Wt%</u>
Oil Phase A:	
Emulsifying Wax NF	3.0
Silicone Oil 245	2.5
Silicone Oil 556	2.0
Hexanediol Behenyl Beeswax	1.0
Lecithin	1.0
Water Phase B:	
Carbopol 940 (2% solution)	10.0
Sodium Lauryl Sulfate	0.5
Triethanolamine	0.1
Cocamide	0.1
Silk Powder	0.1
Marine Dew	0.1
Silk Soluble Liquid	0.1
Water (Distilled)	68.3
Phase C:	
Bee's Milk	10.0
Germaben II	1.0
Fragrance	0.2

Procedure:

Mix and heat water phase to 70-75C. Melt oil phase and add to water phase at 70-75C under agitation. Continue mixing while cooling. At 45C add Phase C and pour into container at 35C.

Adaptation of Formula and its Influence on the Product:

Changes in the actives and the conditioners are straight forward, simple replacements. Gafquat's would be a class of conditioners would fit this formula well.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Emollient Liquid Make-Up**Formulating Design and Advantages:**

Conceals minor skin imperfections, yet moisturizes, giving skin a soft dewy finish. This product has tremendous endurance through very vigorous activities.

Raw Materials:

	<u>Wt%</u>
Phase A:	
Xanthan Gum	0.33
Cellulose Gum	0.23
Water (Distilled)	50.55
Triethanolamine	0.70
PEG 1450	2.35
Methyl Paraben	0.28
Propylene Glycol	1.88
Polysorbate 60	0.47

Phase B:

Titanium Dioxide	8.44
Brown Iron Oxide	2.35
Yellow BC Iron Oxides	0.94
Orange Wax	6.10
Cera Bellina	4.69

Phase C:

Octyl Palmitate	6.57
Silicone 245	2.00
Isopropyl Palmitate	6.10
Hydrogenated Castor Oil	1.41
Isostearic Acid	1.50
Jojoba Oil	0.94
Propylene Glycol Stearate	1.89
Propyl Paraben	0.28

Procedure:

Disperse pigments in the Orange Wax and Cera Bellina in a beaker with a glass stirring rod, allow to solidify. Repeat so-as-to breakup visible agglomerations. Mix and heat to 75C Phase C until uniform, add to Phase B under agitation, maintaining the temperature till homogeneous. Add the mixed and melted Phase B and C to the mixed and melted Phase A. Continue mixing while cooling, pour into containers at approximately 50C.

Adaptation of Formula and its Influence on the Product:

Sunscreens, vegetable oils and branched oils can be substituted in minor amounts since products such as these are sensitive to small changes that will affect stability.

SOURCE: Koster Keunen Inc.: Suggested Formulations

Ester Based Lipstick

Ingredients:	Wt%
Phase A:	
Glyceryl Stearate (Tegin M)	40.00
Caprylic/Capric Triglycerides (Tegosoft CT)	3.00
Cetearyl Octanoate (Tegosoft Liquid)	3.00
Mineral Oil	4.00
Castor Oil	19.50
Cetyl Dimethicone (Abil Wax 9814)	0.50
Petrolatum	6.00
Carnauba	5.00
Ozokerite	2.00
Microcrystalline Wax	2.00
Phase B:	
Pigments in Castor Oil)	15.00
Castor Oil)	
Phase C:	
Antioxidants	Q.S.
Fragrance	Q.S.
Flavor	Q.S.

Procedure:

1. Melt together the ingredients of Phase A (80-90C). Mix until uniform.
2. Add the pigment grinds and the remaining Castor Oil.
3. Add Phase C.
4. Mold.

Sheer Liquid Foundation

Ingredients:	Wt%
Phase A:	
Iron Oxides (micronized/silicone treated)	1.60
Titanium Dioxide (micronized/silicone treated)	6.00
Talc (silicone treated)	4.00
Cyclomethicone	9.00
Cetearyl Octanoate (Tegosoft Liquid)	2.00
Polydecene	3.00
Phase B:	
Dimethicone Copolyol (and) Cyclomethicone (Abil EM 97)	2.80
Cyclomethicone	9.00
Phenyl Trimethicone (Abil AV 20)	1.00
Fragrance	Q.S.
Phase C:	
Propylene Glycol	6.00
Water	54.35
Sodium Chloride	1.25
Preservatives	Q.S.

Procedure:

1. Mix Phase A. Mill.
2. Mix Phase B. Add to Phase A.
3. Mix Phase C, add slowly to A/B.
4. Homogenize.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Eye Contour Balm**Formulating Design and Advantages:**

This product is designed to reduce the signs of aging and fatigue around the eyes. The product's activity comes from Barley Beta Glucan which helps promote the healing of skin through the reduction of irritation. Deodorized Orange Wax moisturizes and protects the skin from the sun due to the strong antioxidant properties.

<u>Raw Materials:</u>	<u>Wt%</u>
Oil Phase:	
Oyster Nut Oil	2.0
Siliconyl Beeswax	5.0
Rice Bran Oil	2.0
Safflower Oil	6.0
Deodorized Orange Wax	2.0
Isostearic Acid	1.5
Isopropyl Palmitate	1.0
Vitamin E	0.5
Isostearic Acid	2.5
Cetylstearyl Alcohol	1.5
Squalane	1.0
Isopropyl Palmitate	2.0
Hydroxy Polyester	1.2
Liquapar	0.4
Water Phase:	
Water (Deionized)	76.1
Allantoin	1.0
Magnesium Aluminum Silicate	1.2
Sodium Borate	0.8
Methyl Paraben	1.2
Xanthan Gum	1.2
Barley 1-3 Beta Glucan 70%	0.2

Procedure:

Weigh out ingredients for Water Phase. Heat to 80C while mixing vigorously (without adding air). Heat Oil Phase to 80C while mixing. Add Oil Phase to Water Phase under rapid agitation. Cool to room temperature.

Adaptation of Formula and it Influence on the Product:

Natural preservatives may be substituted for the synthetics in the formula. Different oils may be substituted.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Eye CreamIngredients:Wt%

Phase A:

H2O	79.80
Carbopol 934	0.35

Phase B:

Product SE-100 (Glyceryl Stearate & PEG-100 Stearate)	3.00
Petrolatum	3.50
Super Hartolan	2.40
Lanolin	2.00
Hest CSO (Cetearyl Octanoate)	1.70
Hest IS-2-O (Isoceteareth-2 Octanoate)	1.40
Hest L-2-O (Laureth-2 Octanoate)	1.40
Cocoa Butter	1.70

Phase C:

H2O, Deionized	1.00
TEA 99%	0.75

Phase D:

Germaben II E	1.00
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Specifications:

pH: 7.50

Visc. #4/12: 40,000 cps

Procedure:

1. In a stainless steel kettle, disperse Carbopol 934 into H2O using a lightnin' type mixer.
2. When completely dispersed and free of lumps, heat to 75C while mixing.
3. In a separate kettle, combine Phase B and heat to 75C while mixing.
4. At 75C, add Phase B to Phase A. Mix until uniform.
5. Add premixed Phase C. Mix well.
6. Cool to below 40C and add Phase D.

SOURCE: Heterene, Inc.: Formulation HC94-147

Facial Scrub

No.	Phase:	Ingredient:	Wt%
1	A	Carbomer	15.00
2	A	Deionized water	57.75
3	A	Propylene glycol	2.50
4	A	Aloe vera gel	0.25
5	B	Cyclomethicone	5.00
6	B	Oils of Aloha Macadamia Nut Oil	2.50
7	B	Stearic Acid XXX	3.50
8	B	Emulsifier	1.00
9	B	Isopropyl myristate	10.00
10	C	Triethanolamine 99%	1.00
11	D	Polyethylene AC-9A	1.50
12	E	Preservative	QS

Manufacturing Procedure:

Phase A: Disperse Carbopol into water while heating to 75C.
Add Propylene glycol and Aloe vera gel.

Phase B: Heat oil phase to 75C. Add to water phase.

Phase C: Add Triethanolamine to oil/water mixture. Cool to 40C.

Phase D: Add Polyethylene AC-9A.

Phase E: Add preservative.

Carbomer is the suspending agent. This scrub is designed for people with oily skin and needs to have a drying effect. Uses two very dry emollients-cyclomethicone and isopropyl myristate. They leave a dry feeling skin. The Oils of Aloha Macadamia Nut Oil leaves the skin with a fresh, moist afterfeel. Kukui nut oil would also work very well in this formula.

SOURCE: Oils of Aloha: Suggested Formulation

Clear Facial Cleanser

Moderately priced formula. Very mild facial cleanser that conditions the skin while it cleans.

Viscosity: 600 to 1100 cps pH: 6.0

Ingredients:

	Wt%
Deionized Water	65.12
Sodium Cocoyl Isethionate (80% active)	2.50
Ammonium Lauryl Sulfate (33% active)	13.32
Cocamidopropyl Betaine (35% active)	14.29
Ucare Polymer LR-400 (Polyquaternium-10)	0.10
Sodium Xylenesulfonate (40% active)	1.25
Ucon 50-HB-660 (PPG-12-Buteth-16)	0.02
Glucam E-10 (Methyl Gluceth-10)	1.00
Glucquat 125 (Lauryl Methyl Gluceth-10 Hydroxypropyl Dimonium Chloride)	2.00
DMDM Hydantoin	0.40

Procedure:

Add the sodium xylenesulfonate to the water with stirring. Continue stirring while sprinkling in the Ucare Polymer LR-400. Once the polymer is completely dispersed, heat to 70C. When the polymer is hydrated, add the sodium cocoyl isethionate, cocamidopropyl betaine and ammonium lauryl sulfate, in that order, waiting for each to dissolve before adding the next. Once uniform, add the remaining ingredients one at a time in the order shown. Allow to cool to at least 40C, then add preservative.

SOURCE: Amerchol: Formulation T82-267-5

Facial Wash with Salicylic Acid

<u>Ingredients:</u>	<u>Wt%</u>
Water	44.0
Sodium C14-16 Olefin Sulfonate	40.0
Monalac MAB	10.0
Phospholipid GLA	2.0
Sodium Chloride	2.0
Salicylic Acid	2.0

Adjust pH to 3.0-3.5

Viscosity 13,500 cps

Clear Viscous Fluid

Procedure:

Add first three ingredients with mild heat. Sequentially, blend in remaining ingredients, then add fragrance, color and package.

Formulation F-685

Milk Enriched Facial Cleanser (Clear)

<u>Raw Material:</u>	<u>Wt%</u>
Water	55.00
Sodium Laureth (2) Sulfate (25%)	35.00
Monalac MPL	2.00
Monalac MO	2.00
Sodium Chloride	1.00
Fragrance	qs
Monalac MAB	5.00

Procedure:

Add in the order listed and adjust pH to 6.5 to 7.5.

Physical Properties:

Appearance: Clear Liquid

Viscosity at 25C (cP): 5,000 to 10,000 varies with pH

Formulation F-723

SOURCE: Mona Industries, Inc.: Suggested Formulations

Foaming Facial Cleanser

<u>Raw Materials:</u>	<u>Wt%</u>
Amisoft CT-12S (30%)	33.0
Cocamide DEA (Amisol CDE)	2.0
Butylene Glycol	5.0
PEG-40 Hydrogenated Castor Oil PCA Isostearate (Pyroter CPI-40)	2.0
Ajidew N-50 (50%)	1.0
Methyl paraben	0.2
Sodium benzoate	0.2
Water	qs

1. All ingredients dissolve at 70-80C with stirring.
2. Cool down to 30C.

pH: 5.5

Viscosity: 6.1 mPa-s (B type\No. 1\30 rpm\30 sec.\25C)

Formula SP-01

Skin Tonic

<u>Raw Materials:</u>	<u>Wt%</u>
Ajidew N-50	3.0
Allantoin	0.1
L-Serine	0.5
Dipotassium Glycyrrhizinate	0.1
Butylene glycol	2.0
Methyl paraben	0.05
Ethanol	8.0
Water	86.25

Procedure:

Dissolve the above ingredients except ethanol at 70-80C and cool down to 50C. Add ethanol to the solution and cool down to room temperature.

Formula No. L-100

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Glistening Body Cologne

This formula is a soft, shimmering fragrance lotion with Velsan D8P-3 liquid which leaves the skin luxuriously soft.

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Isopropyl Palmitate	4.00
Stearic Acid	1.00
Mineral Oil	2.00
Velsan D8P-3 (1)(Isopropyl PPG-2 Isodeceth-7 Carboxylate)	3.00
Glyceryl Monostearate	1.50
Propyl Paraben	0.10
Timica (2) (Mica and Titanium Dioxide)	3.00
Phase B:	
Deionized Water	74.65
Glycerin	5.00
Carbopol 941 (3) (Carbomer-941)	0.25
Triethanolamine 99%	1.00
Dow Corning 200 Fluid (4) (Dimethicone)	2.00
Dimethicone Copolyol	0.20
Phase C:	
Fragrance	2.50
Dye	qs

Procedure:

Heat Phase A to 77C. Separately heat Phase B to 77C. Add Phase A to Phase B. Cool with stirring to 45C. Add Phase C, continue cooling and stirring to 40C.

Appearance: White pearly lotion

pH: 7.0+-0.3

Viscosity: 3300+-500 cps

Notes:

(1) Clariant Corp.

(2) Mearl Corp.

(3) BF Goodrich

(4) Dow Corning

SOURCE: Clariant Corp.: Technical Bulletin CMP-09/Ref: CL15-19C

Light Face Fluid with Emulgade PL 68/50

<u>Component:</u>	<u>Wt%</u>
I Emulgade PL 68/50/Cetearyl Glucoside (and) Cetearyl Alcohol	2.7
Monomuls 60-35C/Hydrogenated Palm Glycerides	1.6
Cetiol J 600/Oleyl Erucate	3.0
Myritol 331/Cocoglycerides	4.0
Cetiol OE/Dicaprylyl Ether	2.0
Baysilon M 350/Dimethicone	0.5
Copherol 1250/Tocopheryl Acetate	1.0
II Glycerin 86%	3.0
Carbopol 5984/Carbomer	0.05
KOH 5%	0.2
III Water	79.95
Preservative/Perfume	q.s.
Viscosity mPas: 15,600	

Preparation in the Laboratory:

Heat phase I to 80C. Heat phase II to 80C and add the oil phase while stirring. Allow the emulsion to cool with stirring. The stirring rate must be selected in such a way that the emulsion is kept in continual motion without developing a so-called "stirring cone". Add the 2% Carbopol swelling at 50C. Neutralization at 40C. Add preservative and perfume at room temperature.
Formulation No.: 96/164/4

Facial Cleansing Gel with Gluadin WO

<u>Component:</u>	<u>Wt%</u>
Plantacare PS 10/Sodium Laureth Sulfate (and) Lauryl Glucoside	12.0
Gluadin WQ/Laurdimonium Hydroxypropyl Hydrolyzed Wheat Protein	2.0
NaCl	2.0
Water	84.0
Preservative/Perfume	q.s.

pH-Value: 5.6

WAS: 8.0

Viscosity Brookfield mPas, RVT, 20C, Rotor 4, 10 rpm: 6,000

Preparation in the Laboratory:

Mix ingredients at room temperature

Hint: Kind and amount of perfume may influence the viscosity of the product.

Formulation No.: 94/138/40

SOURCE: Henkel KGaA: Suggested Formulations

Lipcare

<u>Component:</u>	<u>Wt%</u>
I Myritol 318/Caprylic/Capric Triglyceride	14.0
Myritol PC/Propylene Glycol Dicaprylate Dicaprate	6.5
Ultra Lantrol HP 2074/Lanolin Oil	2.7
IPP/Isopropyl Palmitate	13.0
Candelilla Cera	7.0
Lunacera M/Microcrystalline wax	2.7
Carnauba Cera	1.0
Cera Alba	4.3
Lanolin	7.5
Monomuls 60-35C/Hydrogenated Palm Glycerides	3.7
Controx KS	0.05
Hombitec L5/Titanium dioxide	5.4
Ricinus communis/Castor oil	22.15
II Hydagen CMF/Chitosan Glycolate	10.0

Preparation in the Laboratory:

1. Melt the components listed under I at 80-85C and stir until the pigments are completely incorporated. Homogenize once with a triple roll press and heat up again to 80-85C. 2. Add the ingredients of phase II one after the other and stir for 5 minutes at 80C. Pass mixture twice more through the triple roll press and melt again at approx. 80C. 3. For a pearl-shine lipstick add the pearler and stir until homogeneous. 4. Cast with stirring into the moulds. Allow to cool down to approx. 30C and keep in the refrigerator over night.

Formulation No.: 94/056/146

Lipstick

<u>Component:</u>	<u>Wt%</u>
I Myritol 318/Caprylic/Capric Triglyceride	14.0
Myritol PC/Propylene Glycol Dicaprylate/Dicaprate	6.0
Eutanol G/Octyldodecanol	17.0
Candelilla Wax	5.0
Carnauba Wax	7.0
Bienenwachs 8100	5.0
Dehymuls PGPH/Polyglyceryl-2 Dipolyhydroxystearate	4.0
Monomuls 90 L 12/Glyceryl Laurate	3.0
Castor oil	18.0
Color pigments	q.s.
II Hydagen CMF/Chitosan Glycolate	10.0
Copherol F1300/Tocopherol	2.0

Preparation in the Laboratory:

1. Melt the components listed under I at 80C and stir until homogeneous. 2. Add components listed under II at room temperature. Stir for 5 minutes at 80C. 3. Homogenise twice with a triple roll press and heat up again to 80C. 4. Add phase III. Stir until homogeneous and immediately pour the formulation hot in the form and allow them to cool down over night.

Formulation No. 94/056/181

SOURCE: Henkel KGaA: Suggested Formulations

Liposome Emulsion

This light, milky white emulsion contains liposomes that deliver Evening Primrose Oil, which are rich in gamma-linolenic acid and provide excellent moisturizing and softening benefits.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
Acrylates/C10-30 Alkyl Acrylate Crosspolymer/ Pemulen TR-1	0.25
Carbomer/Carbopol Ultrez 10	0.20
Octyl Stearate/Cetiol 868	8.00
Mineral Oil	10.00
Part B:	
Deionized Water	75.55
Glycerin	2.00
Part C:	
Sodium Hydroxide (18%)	0.50
Part D:	
Phenoxyethanol (and) Methylparaben (and) Butylparaben (and) Ethylparaben (and) Propylparaben/Phenonip	0.50
Lecithin (and) Evening Primrose Oil/Brooksme EPO	3.00

Properties:

pH: 6.2-6.6

Viscosity (cP): 11,000-14,000

Appearance: Milky-white emulsion

Preparation Procedure:

1. Combine the ingredients of Part A in the container that will hold the final product. Mix the ingredients well to disperse the polymers.
2. Combine the ingredients of Part B and mix until homogeneous.
3. Add 3/4 of Part B to Part A slowly with strong mixing. Mix for about 15 minutes to swell the polymers.
4. When the emulsion is smooth and white, add part of the sodium hydroxide and bring the pH to about 7.0. Continue mixing until smooth and uniform.
5. Slowly add the remainder of Part B with moderate mixing.
6. Add remaining sodium hydroxide.
7. Add the preservative and mix until uniform. Add the liposomes using slow agitation to avoid rupturing liposomes. Mix until uniform.

SOURCE: B.F. Goodrich Co.: Formula P0050

Lipstick**Formulating Design and Advantages:**

This red lipstick has a creamy texture and is long wearing. The lipstick is very stable, although it has a high oil concentration. Cera Bellina allows for high coloration without large pigment load and imparts a satin like feel to the lips.

Raw Materials:

	Wt%
1. Cera Bellina (Pg-3 Beeswax)	16.70
2. Candelilla	3.10
3. Ozokerite 160/164	4.20
4. Carnauba #1 Yellow	1.20
5. Castor Oil	45.70
6. Paraffin Oil	16.30
7. Isopropyl Palmitate	6.20
8. Jojoba Oil	1.00
9. Vitamin E	0.50
10.D&C Red #7	4.00
11.Escalol 507	0.75
12.Titanium Dioxide	0.25
13.Propyl Paraben	0.10

Procedure:

Add 1, 10, and 13 into a vessel large enough that will allow the other components to be added after the Cera Bellina (Pg-3 Beeswax) and pigments have been melted (75C) and mixed together with the intention of breaking down as many of the visible agglomerations. After the visible agglomerations have been separated add 2,3 and 4 to the dispersion while mixing. Increase the temperature slightly if needed to melt the carnauba. Then the remainder of the components can be added and mixed at a temperature of 70C. After the product is homogeneous, use a shear mixer at low speed for 45 to 60 minutes, maintaining a similar temperature.

Adaptation of Formula and its Influence on the Product:

Other oils natural or synthetic can easily be substituted to meet the formulator's needs, cost, availability, etc. without significantly changing the characteristics. Higher melting points can easily be achieved with only slight alterations in wax concentration. Biologically active compounds are easily incorporated into the formulas. Depending on the desired color and the blend of pigments used, there will be a need for small ingredient concentration changes in the formula due to the pigment's effect on the gelling properties of the mixture.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Lipstick

<u>Component:</u>	<u>Wt%</u>
I. Myritol 318 Caprylic/Capric Triglyceride	14.0
Myritol PC Propylene Glycol Dicaprylate/Dicaprate	6.0
Eutanol G Octyldodecanol	17.0
Candelilla Cera	7.0
Carnauba Cera	5.5
Cera Alba	6.5
Generol 122 N Soya Sterol	2.5
Dehymuls PGPH Polyglyceryl-2 Dipolyhydroxystearate	4.0
Monomuls 90 L 12 Hydrogenated Palm Glycerides	3.0
Ricinus communis Castor oil	18.0
Color pigments	q.s.
II. Hydagen CMF Chitosan Glycolate	10.0
III. Copherol F 1300 Tocopherol	2.0

Preparation in the Laboratory:

1. Melt the components listed under I at 80-85C and stir until the pigments are completely incorporated. Homogenise once with a triple roll press and heat up again to 80-85C. 2. Add the ingredients of phase II one after the other and stir for 5 minutes at 80C. Pass mixture twice more through the triple roll press and melt again at approx. 80C. 3. For a pearl-shine lipstick add the pearlliser and stir until homogeneous. 4. Cast with stirring into the moulds. Allow to cool down to approx. 30C and keep in the refrigerator over night.

Formulation No.: 94/056/178

Lipstick

<u>Component:</u>	<u>Wt%</u>
I. Myritol 318 Caprylic/Capric Triglyceride	14.0
Myritol PC Propylene Glycol Dicaprylate/Dicaprate	6.0
Eutanol G Octyldodecanol	17.0
Candelilla Cera	5.5
Carnauba Cera	7.0
Bienenwachs 8100 Cera Alba	6.5
Generol 122 N Soya Sterol	2.5
Dehymuls PGPH Polyglyceryl-2 Dipolyhydroxystearate	4.0
Monomuls 90 L 12 Hydrogenated Palm Glycerides	3.0
Castor oil	18.0
Color pigments	q.s.
II Hydagen CMF Chitosan Glycolate	10.0
III Copherol F 1300 Tocopherol	2.0

Preparation in the Laboratory:

1. Melt the components listed under I. at 80-85C and stir until the pigments are completely incorporated. Homogenise once with a triple roll press and heat up again to 80-85C. 2. Add the ingredients of phase II one after the other and stir for 5 minutes at 80C. Pass mixture twice more through the triple roll press and melt again at approx. 80C. 3. For a pearl-shine lipstick add the pearlliser and stir until homogeneous. 4. Cast with stirring into the moulds. Allow to cool down to approx. 30C and keep in the refrigerator overnight.

Formulation No.: 94/056/179

SOURCE: Henkel KGaA: Suggested Formulations

Lipstick

<u>Raw Materials:</u>		<u>Wt%</u>
A: Castor oil		30.0
D&C Red #7		3.0
Amihope LL		1.0
Mica		12.0
TiO ₂		4.0
B: Castor oil		22.4
Candelilla		5.7
Carnauba		1.8
Cerecin		4.0
Myritol 318		9.0
Mineral oil		2.0
Propylparaben		0.1
Eldew CL-301		5.0

Procedure:

Mix (A) pigments with Amihope LL in a high speed mixer for several minutes, then disperse the treated pigments in castor oil with triple roll mill.

Dissolve all (B) ingredients with heating and add to (A) in triple roll mill. Mold and cool down.

Formula LP-205

Lipstick

<u>Ingredients:</u>		<u>Wt%</u>
A: Castor oil		55.0
Candelilla wax		4.8
Carnauba wax		2.0
Ozokerite		4.0
Caprylic/capric triglyceride		15.0
Eldew CL-301		5.0
B: Mica		7.4
Yellow iron oxide		2.2
D&C Red #7		3.0
Amihope LL		1.6

Procedure:

Mix (A) ingredients at 80C. Mix (B) ingredients in a turbo mixer until a fine & homogeneous dispersion is obtained. Add (B) to (A) and mix until uniform, then pour into molds.

Features:

Eldew CL-301 improves spreadability, gloss and vividness of colors in lipsticks.

Formula LP-203

SOURCE: Ajinomoto U.S.A., Inc.: Eldew CL-301 Applications

Lipstick with Miglyol Gel

<u>Raw Materials:</u>	<u>Wt%</u>
A) Miglyol Gel B (Caprylic/Capric Triglyceride (and) Stearalkonium Hectorite (and) Propylene Carbonate)	10.00
Dynacerein 660 (Oleyl Erucate)	5.00
Softisan 649 (Bis-Diglyceryl Polyacyladipate-2)	10.00
Miglyol 829 (Caprylic/Capric/Succinic Triglyceride)	6.00
Imwitor 780K (Isostearyl Diglyceryl Succinate)	6.00
Softigen 767 (PEG-6 Caprylic/Capric Glycerides)	5.00
Lanolin Oil	10.00
Beeswax	7.00
Candelilla Wax	8.00
B) Rewopal PIB 1000 (Polyisobutene)	22.00
Lanolin Wax	10.00
Sodium Stearate	1.00
Antioxidants	q.s.
C) Color	10.00
Fragrance	0.50

Preparation:

(A) is melted and stirred until homogeneous. (B) is melted and added to (A). (C) is added, and the mass is poured into molds.

Formulation 2.2B(1)

Creamy Lipstick Base (With AHA-Ester)

<u>Raw Materials:</u>	<u>Wt%</u>
Imwitor 370 (Glyceryl Cocoate/Citrate/Lactate)	5.00
Imwitor 380 (Glyceryl Cocoate/Citrate/Lactate)	8.00
Softisan 100 (Hydrogenated Coco-Glycerides)	28.00
Softisan 649 (Bis-Diglyceryl Polyacyladipate-2)	15.00
Dynacerein 660 (Oleyl Erucate)	12.00
Castor Oil	15.00
Beeswax/Carnauba Wax	17.00
Antioxidants	q.s.

Preparation:

All ingredients are melted together at about 75 degrees C.

Formulation 2.2R

SOURCE: Creanova Inc.: Suggested Formulations

Lip Stick with Softisan GelRaw Materials:

	<u>Wt%</u>
A) Softisan Gel (Bis-Diglyceryl Polyacyladipate-1 (and) Propylene Glycol Dicaprylate/Dicaprate (and) Stearalkonium Hectorite (and) Propylene Carbonate)	4.50
Dynacerin 660 (Oleyl Erucate)	2.50
Softisan 649 (Bis-Diglyceryl Polyacyladipate-2)	5.50
Softisan 100 (Hydrogenated Cocoglycerides)	27.00
Miglyol 812 (Caprylic/Capric Triglyceride)	16.00
White Soft Paraffin	9.00
Hard Paraffin	14.00
Beeswax	10.50
B) Color	10.00
Fragrance	1.00

Preparation:

(A) is melted and stirred until homogeneous. (B) is added, and it is poured into molds.

Formulation 2.2M(2)

Lip Care Stick with SPF ca.6Raw Materials:

	<u>Wt%</u>
A) Miglyol 840 (Propylene Glycol Dicaprylate/Dicaprate)	11.00
Softisan 649 (Bis-Diglyceryl Polyacyladipate-2)	4.00
Beeswax	9.00
Candelilla Wax	4.00
Paraffin Oil	2.00
Castor Oil	56.00
Sachtotec LA 10 (Zinc Oxide)	6.00
Eusolex 6007 (octyl Dimethyl PABA)	4.00
Timiron Silk Red (Mica (and) Titanium Dioxide)	7.00
B) Fragrance	q.s.
Antioxidants	q.s.

Preparation:

(A) is heated up to 80 degrees C, and stirred until homogeneous. (B) is added, and the mass is poured into molds.

Formulation 2.2Q

SOURCE: Creanova Inc.: Suggested Formulations

Lipstick with Timiron MP-60, MP-65

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Castor Oil	7.00
D&C Red #7 Calcium Lake/C19-011 Rubine Lake	1.50
D&C Red #6 Barium Lake (and) Rosin/C19-022 Light Rubine Lake	1.50
Phase B:	
Castor Oil	33.70
Candellila Wax	5.70
Carnauba Wax	1.80
Ozokerite Wax #77W	1.50
Microcrystalline Wax #214	3.00
Caprylic/Capric Triglyceride/Myritol 318	16.00
Mineral Oil 90 SUS/Blandol	2.00
Octyldodecyl Stearoyl Stearate/Ceraphyl 847	5.00
Octyl Dodecanol/Eutanol G	5.00
Hydroxylated Lanolin/OHlan	1.00
Methyl Paraben	0.20
Propyl Paraben	0.10
Phase C:	
Mica (and) Iron Oxides (and) Titanium Dioxide/ Timiron MP-60, MP-65	15.00

Procedure:

Combine Phase A. Stir with a high intensity mixer until homogeneous. Pass across a three roll mill until agglomerates are reduced to less than 25 um. Combine Phase B. Heat to 80-85C with Lightnin' mixer agitation, stirring until clear. Add Phase A. Add Phase C, maintaining agitation until dispersed. Pour into ambient temperature molds at 72-74C.

Formula AS1-9

Blackstar Lipstick

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Castor Oil	39.40
Candellila Wax	6.30
Carnauba Wax	2.00
Ozokerite Wax #77W	1.80
Microcrystalline Wax #214	3.30
Caprylic/Capric Triglyceride/Myritol 318	17.70
Mineral Oil 90 SUS/Blandol	2.20
Octyldodecyl Stearoyl Stearate/Ceraphyl 847	5.55
Octyldodecanol/Eutanol G	5.55
Hydroxylated Lanolin/OHlan	1.10
Methyl Paraben	0.20
Propyl Paraben	0.10
Phase B:	
Iron Oxides and Mica/Colorona Blackstar Colors	15.00

Procedure:

Combine Phase A. Heat to 80-85C with Lightnin' mixer agitation, stirring until clear. Add Phase B, maintaining agitation until dispersed. Pour into ambient temperature molds at 72-74C.

Formula AS1-7

SOURCE: Rona/EM Industries, Inc.: Suggested Formulations

Liquid Crystal Make-Up

<u>Ingredients:</u>	<u>Wt%</u>
A) Water	58.70
Arlatone 2121, Sorbitan Stearate (and) Sucrose	
Cocoate	2.50
Glycerin	4.00
B) Ultrafine Titanium Dioxide, Titanium Dioxide	12.00
Yellow Iron Oxide, Iron Oxide	2.00
Red Iron Oxide, Iron Oxide	0.40
Black Iron Oxide, Iron Oxide	0.25
C) Xanthan Gum	0.15
D) Arlamol S7, Cyclomethicone (and) PPG-15 Stearyl Ether	20.00
E) Preservative, Quaternium-15	Q.S.

Preparation Method:

- 1) Heat and stir (A) to 80C.
- 2) Blend (B) well at room temperature.
- 3) Slowly add (B) at RT to (A) at 80C with good agitation.
- 4) When the temperature of (AB) drops to 75C, add (C) with moderate stirring.
- 5) When (ABC) is uniform, add (D) to (ABC) and homogenize for a few minutes (until temperature drops to 65C).
- 6) Return to propeller stirring and continue stirring until temperature drops to 45C. At this point add (E) and any water lost due to evaporation. Switch to sweep type agitation and stir to room temperature.

Formula CP1207

Water-in-Oil Make-up

<u>Ingredients:</u>	<u>Wt%</u>
A) Arlacel P135, PEG-30 Dipolyhydroxystearate	2.00
Arlamol S7, Cyclomethicone (and) PPG-15 Stearyl Ether	6.00
Arlamol HD, Isohexadecane	12.00
B) Atlas G-2330, Sorbeth-30	4.00
MgSO ₄ -7H ₂ O, Magnesium Sulfate	0.70
Water	60.65
C) Ultrafine Titanium Dioxide, Titanium Dioxide	12.00
Yellow Iron Oxide, Iron Oxide	2.00
Black Iron Oxide, Iron Oxide	0.25
Red Iron Oxide, Iron Oxide	0.40
D) Preservative, Quaternium-15	Q.S.

Preparation Method:

- 1) Heat and stir (A) to 75C.
- 2) Heat and stir (B) to 85C.
- 3) Blend (C) well at room temperature.
- 4) Slowly add (B) to (A) with good agitation.
- 5) After (A) & (B) are mixed begin adding (C) at room temperature to (AB) using propeller agitation.
- 6) Homogenize (ABC) for a few minutes and then switch back to sweep type agitation and stir to room temperature. Add (D) to (ABC) at any temperature below 50C.

Formula CP1208

SOURCE: ICI Surfactants: Suggested Formulations

Liquid Foundation with Extender W

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Deionized Water	48.92
Hydroxylated Lecithin/Alcolec Z-3	0.10
Phase B:	
Mica (and) Titanium Dioxide/Extender W	4.84
Mica/Mica MRP	4.61
Mica (and) Red Iron Oxide/Transparent Red	2.40
Mica (and) Iron Oxides/Transparent Yellow Ochre	1.90
Mica (and) Black Iron Oxide/Transparent Black	0.25
Phase C:	
Propylene Glycol	4.00
Magnesium Aluminum Silicate/Veegum	1.00
Phase D:	
Propylene Glycol	4.00
Cellulose Gum/CMC 7H3SF	0.15
Phase E:	
Deionized Water	5.00
Triethanolamine 99%	1.00
Phase F:	
Sucrose Cocoate/Crodesta SL40	1.50
Methyl Paraben	0.20
Disodium EDTA	0.05
Phase G:	
Propylene Glycol Dicaprylate Dicaprate/Edenol 302	10.00
Isostearyl Stearoyl Stearate/Hetester ISS	2.00
Sorbitan Monolaurate/Arlacel 20	2.50
Cetyl Alcohol	1.25
Stearic Acid	1.50
Oleic Acid	0.50
BHA	0.05
Propyl Paraben	0.10
Phase H:	
DMDM Hydantoin 55%/Glydant	0.18
Deionized Water	2.00

Procedure:

Water Phase: Combine the ingredients of Phase A. Mix until homogeneous. Add Phase B, homogenizing until no undispersed pigment remains. Combine and add Phase C. Homogenize and heat to 90C for 15 minutes. Cool to 75C. Combine and add Phase D and Phase E, maintaining homogenizer agitation until no undispersed particles remain. Add Phase F.

Oil Phase: Combine the ingredients of Phase G separately from the water phase. Heat to 75-80C with propeller agitation until homogeneous.

Emulsification: Add oil phase to water phase with homogenizer agitation. Maintain temperature and homogenization for 15 minutes. Cool to 45C with moderate agitation. Combine and add Phase H. Cool to 30C.

SOURCE: Rona/EM Industries, Inc.: Formula EM3-39-1

Liquid Foundation with Low Lustre Pigment

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Deionized Water	52.92
Hydroxylated Lecithin/Alcolec Z-3	0.10
Phase B:	
Low Lustre Pigment/Rona	10.00
Phase C:	
Propylene Glycol	4.00
Magnesium Aluminum Silicate/Veegum	1.00
Phase D:	
Propylene Glycol	4.00
Cellulose Gum/CMC 7H3SF	0.15
Phase E:	
Deionized Water	5.00
Triethanolamine 99%	1.00
Phase F:	
Sucrose Cocoate/Crodesta SL40	1.50
Methyl Paraben	0.20
Disodium EDTA	0.05
Phase G:	
Propylene Glycol Dicaprylate Dicaprate/Edenol 302	10.00
Isostearyl Stearoyl Stearate/Hetester ISS	2.00
Sorbitan Monolaurate/Arlace1 20	2.50
Cetyl Alcohol	1.25
Stearic Acid	1.50
Oleic Acid	0.50
BHA	0.05
Propyl Paraben	0.10
Phase H:	
DMDM Hydantoin 55%/Glydant	0.18
Deionized Water	2.00

Procedure:

Water Phase: Combine the ingredients of Phase A. Mix until homogeneous. Add Phase B, homogenizing until no undispersed pigment remains. Combine and add Phase C. Homogenize and heat to 90C for 15 minutes. Cool to 75C. Combine and add Phase D and Phase E, maintaining homogenizer agitation until no undispersed particles remain. Add Phase F.

Oil Phase: Combine the ingredients of Phase G separately from the water phase. Heat to 75-80C with propeller agitation until homogeneous.

Emulsification: Add oil phase to water phase with homogenizer agitation. Maintain temperature and homogenization for 15 minutes. Cool to 45C with moderate agitation. Combine and add Phase H. Cool to 30C.

SOURCE: Rona/EM Industries, Inc.: Formula EM3-21-4

Liquid Makeup Formulation-2

<u>Ingredients:</u>	<u>Wt%</u>
MAS Type IA	1.00
Deionized Water	53.00
Triethanolamine	0.75
Glycereth-26	10.50
Pigment Blend	5.29
Isopropyl Isostearate	9.06
Mineral Oil (and) Lanolin Alcohol	6.50
Isopropyl Palmitate	4.00
Isopropyl Myristate	2.50
Hydrogenated Soy Glyceride	2.10
Stearic Acid	1.60
Diocetyl Adipate (and) Octyl Stearate (and) Octyl Palmitate	2.10
Cocoyl Sarcosine	1.00
Lithium Stearate	0.10
Preservative	0.50

Brookfield Viscosity @ 12 rpm, cps:

After Aging 1 Day: 2000

After Aging 1 Week: 1300

After Aging 4 Weeks: 1200

Yield Value, Dynes/Sq. Cm.: 90

Formula pH:

After Aging 1 Day: 6.1

After Aging 1 Week: 6.2

After Aging 4 Weeks: 6.2

Stability Observations:

After Aging 1 Week @ Room Temp.: OK

After Aging 4 Weeks @ Room Temp.: OK

After Aging 1 Week @ 6C: OK

After Aging 4 Weeks @ 6C: OK

After Aging 1 Week @ 38C: OK

After Aging 4 Weeks @ 38C: OK

After Aging 1 Week @ 50C: OK

After Aging 4 Weeks @ 50C: Separation

SOURCE: R.T. Vanderbilt Co., Inc.: Suggested Formulations

Long Lasting Lipstick

<u>Component:</u>	<u>Wt%</u>
I. Myritol 318 Caprylic/Capric Triglyceride	13.0
Myritol PC Propylene Glycol Dicaprylate Dicaprate	6.0
Ultra Lantrol HP 2074 Lanolin Oil	2.5
IPP Isopropyl Palmitate	12.0
Candelilla Cera	6.5
Lunacera M Microcrystalline Wax	2.5
Carnauba Cera	1.0
Cera Alba	4.0
Lanolin	7.0
Antaron WP 660	1.0
Generol 122N Soybean Sterol	3.5
Controx KS	0.05
Titanium Dioxide	0.5
Ricinus communis Castor oil	19.95
Color pigments	n.B./q.s.
II. Hydagen CMF Chitosan Glycolate	10.0
1. Melt the components listed under I at 80-85C and stir until the pigments are completely incorporated. Homogenise once with a triple roll press and heat up again to 80-85C. 2. Add the ingredients of Phase II one after the other and stir for 5 minutes at 80C. Pass mixture twice more through the triple roll press and melt again at approx. 80C. 3. For a pearl-shine lipstick add the pearler and stir until homogeneous. 4. Cast with stirring into the moulds. Allow to cool down to approx. 30C and keep in the refrigerator overnight.	
Formulation No.: 94/056/151	

Care Lipstick

<u>Component:</u>	<u>Wt%</u>
I. Myritol 318 Caprylic/Capric Triglyceride	14.0
Myritol PC Propylene Glycol Dicaprylate Dicaprate	6.5
Ultra Lantrol HP 2074 Lanolin Oil	2.7
IPP Isopropyl Palmitate	13.0
Candelilla Cera	7.0
Lunacera M Microcrystalline Wax	2.7
Carnauba Cera	1.0
Cera Alba	4.3
Lanolin	7.5
Monomuls 60-35C Hydrogenated Palm Glycerides	3.7
Controx KS	0.05
Homobitec L5 Titanium dioxide	5.4
Ricinus communis Castor oil	22.15
II. Hydagen CMF Chitosan Glycolate	10.0
1. Melt the components listed under I at 80-85C and stir until the pigments are completely incorporated. Homogenise once with a triple roll press and heat up again to 80-85C. 2. Add the ingredients of phase II one after the other and stir for 5 minutes at 80C. Pass mixture twice more through the triple roll press and melt again at approx. 80C. 3. For a pearl-shine lipstick add the pearler and stir until homogeneous. 4. Cast with stirring into the moulds. Allow to cool down to approx. 30C and keep in the refrigerator overnight.	
Formulation No.: 94/056/146	

SOURCE: Henkel KGaA; Suggested Formulations

Luxurious Makeup (W/O)

<u>Ingredients:</u>	<u>Wt%</u>
A: Veegum	1.2
Water	37.9
Magnesium Sulfate	0.4
B: Talc	5.5
Kaolin	1.5
Titanium Dioxide	5.0
Iron Oxides	3.0
C: Mineral Oil Light	15.0
Polysynlane	8.0
Ritachol	8.0
Lanapene	7.0
70% Sorbitol Solution	5.0
Witcamide 511	1.5
Preservatives	q.s.

Procedure:

Add the Veegum to the water slowly, agitating continuously until smooth (for detailed preparation recommendations, see Veegum smooth). Grind B and add to A, mixing until uniform. Add A and B to C and mix until smooth and uniform.

Packing:

This formula is a fluid lotion suitable for dispensing from a standard liquid makeup bottle.

Comments:

This formula constitutes an economical, cold process W/O emulsion stabilized by the use of Veegum. It is an elegant moisturizing makeup for dry skin. Veegum serves to not only stabilize the emulsion and help control viscosity, but also to insure uniform color throughout the product with no color streaking or settling. By formulating the pigments into the internal phase, where they are suspended by the Veegum, the stability of the emulsion itself insures that no pigment settling can occur.

The makeup spreads smoothly with a rich, non-greasy feel, leaving a uniform pigment film plus the effective emollients and moisturizers of the external phase. This formula would be a suitable base for a line of luxurious makeups for the mature woman with dry skin problems. The CTFA adopted name for Veegum is magnesium aluminum silicate.

SOURCE: Polyester Corp.: Suggested Formulation

Makeup Remover
(Wash off type)

<u>Raw Materials:</u>	<u>Wt%</u>
Acylglutamate CT-12	28.0
2-Alkyl-N-Carboxymethyl-N-hydroxyethyl Imidazolidinium Betaine	28.0
Coconut fatty acid diethanolamide	5.0
Glycerin	1.8
Ajidew N-50	1.0
Lauryl monophosphoric acid	2.0
Triethanolamine	1.0
Ethylene glycol distearate	2.0
Citric acid	1.2
Pyroter CPI-40	1.5
Pyroter CPI-60	1.5
Methylparaben	0.2
Perfume	0.2
Water	balance

Procedure:

Dissolve triethanolamine and glycerin in water and heat up to 60C, then add lauryl monophosphoric acid gradually. Add the other ingredients and dissolve at 70C. Cool down to room temperature with stirring.

pH: 5.2

Viscosity: 2600 cps

Formula MRW-08

Makeup Remover
(wash off type)

<u>Raw Materials:</u>	<u>Wt%</u>
A: Acylglutamate HS-11	4.0
Water	23.8
Methyl paraben	0.2
B: Mineral oil	70.4
Glyceryl monostearate S.E.	1.5
Butyl paraben	0.1

Procedure:

Dissolve (A) by heating at 80-85C and cool down to 30C quickly. Mix (B) at 25C with stirring. Add (B) to (A) slowly with homogenizing. Cool down to 10C with stirring.

Formula MRE-06

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Make-up Remover (Liquid Crystal Gel)

MRJ-R1 contains much oil and water.

As MRJ-R1 uses gentle anionic surfactant, we feel very refreshed after washing our skin.

<u>Raw Materials:</u>	<u>Wt%</u>
A: Amisoft CT-12S (30%)	21.6
Amisoft CK-11	2.9
NaCl	1.4
Water	qs
Preservative	qs
B: PEG-10 Glyceryl Triisostearate (Emalex GWIS-310)	5.8
PEG-20 Glyceryl Triisostearate (Emalex GWIS-320)	23.0
Mineral Oil (Silkol P55) (viscosity 29 cPs)	26.9
Octyldodecanol	3.8
Preservative	qs
Fragrance	qs

1. Heat A to 50-60C and stir up until it completely becomes uniform.
 2. Heat B to 50-60C and stir up until it completely becomes uniform.
 3. Add A slowly to B and stir up.
 4. Start vacuuming (700 mm Hg) and cooling down to 30C.
- Formula No. MRJ-R3

Make up Remover

<u>Raw Materials:</u>	<u>Wt%</u>
A: Acylglutamate HS-21	2.2
Isostearic acid	6.7
B: Mineral oil	77.7
Emalex GWIS-320	6.7
Emalex GWIS-330	6.7

Procedure:

Dissolve (A) and (B) at 80C. Add (A) to (B) with stirring. Cool down to room temperature.

Formula No. MRJ-07

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Mascara

This mascara eyelash makeup cream applies beautifully from an automatic mascara unit containing a brush for application. The urethane polymer (Avalure UR 450 polymer) contributes bulk and adherence to the eyelashes allowing for a long-lasting plump look. It also eliminates the need for any of the other gums such as gum arabic in the product.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
1. Deionized Water	59.50
2. Methylparaben NF	0.10
3. Hydroxypropyl Methyl Cellulose/Methocel 40-202	0.20
4. Triethanolamine (99%)	2.80
5. DL-Panthenol USP	0.50
6. Urethane Polymer/Avalure UR 450 Polymer	6.00
7. PVP-K30	2.00
Part B:	
8. Iron Oxides/C33-7734 Cosmetic Black	2.00
Part C:	
9. Stearic Acid/Emersol 132	5.50
10. Bayberry Wax	1.80
11. Glyceryl Stearate/Protachem GMS-450	1.70
12. Beeswax, White	4.50
13. Carnauba Wax, Prime #1 Yellow, Refined Flakes	2.70
14. WW Gum Rosin	1.80
15. Propylparaben NF	0.10
Part D:	
16. Simethicone/Mirasil SM	0.10
17. Wheat Germ Oil/Lipovol WGO	0.10
18. Phenonip	0.10
19. Germaben II	0.50

Preparation Procedure:**Part A:**

1. Add the deionized water to a suitable kettle and begin heating the water to 40C. Add the methylparaben and mix until dissolved.
2. Turn the heat off and add the Methocel. Mix until uniformly dispersed and until no lumps appear.
3. Add the triethanolamine and mix until the gum is hydrated and clear.
4. Add the Panthenol and mix until dissolved.
5. Add the Avalure UR 450 polymer and continue mixing until the mixture is uniform.
6. Add the PVP powder and mix until all of the powder is in solution and Part A is uniform. Maintain the temperature but raise it to 75C just before combining with Parts B & C.

Part B & C:

7. Mix all of the ingredients of Part C (oil phase) in a suitable kettle and melt to 75C.
8. When all of Part C has been melted, add the pigment of Part B to it and mix until the pigment is completely wetted/uniform.
9. Continue mixing and begin cooling and at 50C add Simethicone, Wheat Germ Oil and preservatives. Continue cooling to RT.

SOURCE: BF Goodrich Specialty Chemicals: Formulation A0002

Moisturizing Milk Creme with Monasil PCA

This formulation provides a high degree of substantivity and conditioning. It helps to minimize or alleviate dry skin conditions while leaving a smooth non-greasy after-feel.

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Monalac MPL	3.0
A	Monaquat SL-5	5.0
A	Water	57.7
A	Potassium Hydroxide (45%)	0.2
A	Monasil PCA	4.0
B	Monafax MAP 160	0.5
B	Monalac ML	20.0
B	Cetearyl Alcohol	5.1
B	Isopropyl Palmitate	2.0

Procedure:

Combine ingredients in both phases separately and heat to 75C. Add (B) to (A) and continue to homogenize. Stir-cool, with minimal aeration, to 40C, add fragrance, color and preservative. Adjust pH to 6.0 then fill.

Appearance: High moisturizing milky creme

Formulation F-717

Pump Dispensible Luxurious Body Moisturizer

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Deionized Water	71.3
A	Monalac MPL	4.0
A	Monalac MO	5.0
A	Monaquat SL-5	3.0
A	Glycerin	4.0
B	Monalac ML	6.0
B	Cetearyl Alcohol	4.0
B	Oleyl Alcohol	2.0
C	Fragrance	0.2
C	Preservative	0.5

Procedure:

Heat both parts (A and B) separately to 70C. Add Part B to Part A and homogenize well at 70-75C. Stir cool with minimal aeration to 40-45C and add fragrance, preservative, etc. Adjust the pH to 5.0-6.0 then fill.

Odor and Appearance: Pleasantly scented, pump dispensible, milky creme/lotion

Formulation F-730

SOURCE: Mona Industries, Inc.: Suggested Formulations

**Moisturizing Milk Creme Lotion F-712 with Silicone PLN
and High Fragrance Level**

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Monalac MPL	5.0
A	Monaquat SL-5	5.0
A	Water	55.7
A	Potassium Hydroxide (45%)	0.2
A	Monasil PLN	4.0
B	Monafax MAP 160	0.5
B	Monalac ML	20.0
B	Cetearyl Alcohol	5.1
B	Isopropyl Palmitate	2.0
C	Fragrance	2.0
C	Preservative	0.5

Procedure:

Combine ingredients in both phases separately and heat to 75C. Add (B) to (A) and continue to homogenize. Stir-cool, with minimal aeration, to 40C, add fragrance, color and preservative. Adjust pH to 6.0 then fill.

Physical Properties:

Appearance: Flowable high moisturizing milky lotion
Formulation F-712

**Flowable Moisturizing Milk Creme F-713 with High
Fragrance Level**

<u>Part:</u>	<u>Raw Material</u>	<u>Wt%</u>
A	Monalac MPL	5.0
A	Monaquat SL-5	5.0
A	Water	59.7
A	Potassium Hydroxide (45%)	0.2
B	Monafax MAP 160	0.5
B	Monalac ML	20.0
B	Cetearyl Alcohol	5.1
B	Isopropyl Palmitate	2.0
C	Fragrance	2.0
C	Preservative	0.5

Procedure:

Combine ingredients in both phases separately and heat to 75C. Add (B) to (A) and continue to homogenize. Stir-cool, with minimal aeration, to 40C, add fragrance, color and preservative. Adjust pH to 6.0 then fill.

Physical Properties:

Appearance: High moisturizing flowable milky creme.
Formulation F-713

SOURCE: Mona Industries, Inc.: Suggested Formulations

Nonionic Liquid Makeup

<u>Ingredients:</u>	<u>Wt%</u>
A: Veegum	0.75
Keltrol	0.15
Water	67.10
Glycerin	4.00
Citric acid	0.30
B: Talc	5.00
Titanium dioxide	5.00
Iron oxides	3.70
C: Ritachol	5.00
Crodamol MM	2.50
Polysynlane	2.00
Oleyl alcohol	2.00
Cosmowax	2.00
Tween 85	0.05
Preservative	q.s.

Procedure:

Add the dry blend of Veegum and Keltrol to the water slowly, agitating continuously with the highest shear available until smooth. Add the glycerin and citric acid and mix until smooth. Mix B (grind if necessary) until homogeneous. Add B and A and mix until uniform. Heat A and B to 60-65C. Heat C to 60-65C. Add C to A and B and mix until cool.

Moisturizing Skin Milk

<u>Ingredients:</u>	<u>Wt%</u>
Polysynlane	6.0
I.P.M.	4.0
Lanolin Wax	1.0
Stearic Acid	2.5
Cetanol	0.5
Glyceryl Mono Stearate	1.0
PEG-200 Mono Stearate	1.5
Solulan 16	1.0
Triethanolamine	0.3
Propylene Glycol	6.0
Perfume & Preservatives	q.s.
Water	ad. 100.0

SOURCE: Polyester Corp.: Suggested Formulations

Oil-in-Water Hydro-Gel for Sensitive Skin (Page 1)

The following formulation illustrates the outstanding versatility of Airlatone 2121 compared with classic HLB-type emulsifiers. Two different formulations are mixed together to obtain an end formulation with outstanding lightness, smoothness and stability. This type of formulation, with a low oil phase and an extended amount of bound moisture, fits very well in this new concept of "gel-creams".

Oil-in-Water Hydro-Gel for Sensitive Skin

<u>Ingredients:</u>	<u>Wt%</u>
A Oil-in-water moisturising milk F41-5-16A	50.0
B Hydrating gel F41-5-16B	50.0

Manufacture:

Mix both formulations at room temperature.

Comments:

Viscosity: 16,692 mPa s (Brookfield LVT, spindle D, 6 rpm)

Energy input is related to final formulation viscosity.

Formulation F41-5-16

The separate components are:

Hydrating Gel

<u>Ingredients:</u>	<u>Wt%</u>
A Water	89.3
Alpantha	0.4
B Atlas G-2330	10.0
Preservative	q.s.
C Carbopol ETD 2001*	0.3
D NaOH (30% solution)	to pH 6.5-7

Manufacture:

1. Mix A at room temperature.
2. Add B whilst stirring.
3. Slowly add C and stir until a homogeneous solution is obtained
4. Neutralise product by adding D.

Comments:

Viscosity: 42,120 mPa s (Brookfield LVT, spindle C, 6 rpm)

*Carbopol ETD 2001 (Carbomer, INCI)-BF Goodrich

Formulation F41-5-16B

SOURCE: ICI Americas: Suggested Formulations

Oil-in-Water Hydro-Gel for Sensitive Skin (Page 2)
Oil-in-water Moisturizing Milk

<u>Ingredients:</u>	<u>Wt%</u>
A Arlamol M812	2.0
Finsolv TN*	4.0
Eutanol G*	2.0
Laurex CS*	1.5
Lanolin alcohol	1.0
Jojoba oil	0.5
 B Arlatone 2121	 2.0
Butylene glycol	3.0
Preservative	q.s.
Water	78.8
 C Keltrol*	 0.2
 D Ethanol	 5.0

Manufacture:

1. Disperse Keltrol in cold water whilst stirring.
2. Heat oil phase to 75C.
3. Heat water phase to 85C.
4. Slowly add the oil phase to the water phase whilst stirring intensively.
5. Homogenise the mixture intensively at 75C for one minute.
6. Allow to cool whilst stirring moderately.
7. Add ethanol below 40C.
8. Cool to room temperature.

Comments:

Viscosity: 3,120 mPa s (Brookfield LVT, spindle B, 6 rpm)
 Energy input is related to final formulation viscosity.

*Finsolv TN (C12-C15 Alkyl Benzoate, INCI)-Finetex
 Eutanol G (Octyldodecanol, INCI)-Henkel
 Laurex CS (Cetearyl Alcohol, INCI)-Albright & Wilson
 Keltrol (Xanthan Gum, INCI)-Kelco

SOURCE: ICI Surfactants: Formula F41-5-16A

Oil-in-Water Milk with "Natural" Preservative

<u>Ingredients:</u>		<u>Wt%</u>
A	Arlamol HD	3.0
	Arlamol E	3.0
	Avocado oil	5.0
	Wheat germ oil*	2.0
	Sunflower oil	5.0
	Anti-oxidant	q.s.
B	Carbopol 5984* (3% solution)	5.0
	Rhodopol SC*	0.15
	Glycerol	3.0
	Arlatone 2121	3.5
	Demineralised water	53.35
	Propylene glycol	2.0
C	NaOH (30%)	to pH 6-6.5
D	Ethanol	15.0

Manufacture:

1. Mix the Arlatone 2121 in the heated water phase at 80C under moderate stirring until a homogeneous dispersion is formed.
2. Disperse the hydrocolloid in the heated aqueous phase at 75C with moderate stirring.
3. Add the heated oil phase to the aqueous phase under intensive stirring.
4. Homogenise the mixture intensively at 75C for one minute.
5. Add phase D at +50C and control pH.
6. Cool to 35C whilst stirring moderately.
7. Add heat-sensitive ingredients whilst stirring moderately.

Comments:

Viscosity: 12,400 mPa s (Brookfield LVT, spindle E, 6 rpm)
 Energy input is related to final formulation viscosity.
 Ethanol is incorporated as "natural" preservative.

*Wheat germ oil-Sinerga

Carbopol 5984 (Carbomer, INCI)-BF Goodrich

Rhodopol SC (Xanthan Gum, INCI)-Rhône Poulenc

SOURCE: ICI Surfactants: Formulation F41-5-11

Oil-in-Water Moisturising Milk

<u>Ingredients:</u>		<u>Wt%</u>
A Arlamol HD		10.0
Paraffin oil perliquidum*		2.0
Almond oil		2.0
Avocado oil		2.0
Vitamin E acetate*		1.0
Anti-oxidant		
B Arlatone 2121		3.0
Propylene glycol		2.5
Preservative		q.s
Water		70.0
C Carbopol 934* (2% w/w a.i.)		7.5
D NaOH (10% w/w in solution)		to pH 6.5

Manufacture:

1. Mix the Arlatone 2121 in the heated water phase at 80C under moderate stirring until a homogeneous dispersion is formed.
2. Disperse the hydrocolloid in the heated aqueous phase at 75C with moderate stirring.
3. Add the heated oil phase to the aqueous phase under intensive stirring.
4. Homogenise the mixture intensively at 75C for one minute.
5. Add phase D at +/-50C and control pH.
6. Cool to 35C whilst stirring moderately.
7. Add heat-sensitive ingredients whilst stirring moderately.

Comments:

Viscosity: 14,670 mPa s (Brookfield LVT, spindle D, 6 rpm)
 Energy input is related to final formulation viscosity.

*Paraffin oil perliquidum (Mineral Oil, INCI)-Merck
 Vitamin E acetate (Tocopheryl Acetate, INCI)-Roche
 Carbopol 934 (Carbomer 934, INCI)-BF Goodrich

SOURCE: ICI Surfactants: Formulation F41-5-6

Powder Eyeshadow

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Italian Talc/Supra Talc	9.70
Bismuth Oxychloride/Biron LF-2000	20.00
Calcium Silicate/Microcel E	1.00
Nylon-12/Orgasol 2002 UD Nat Cos	5.00
Manganese Violet 43001	15.00
Ultramarine Blue 43W1810	15.00
Black Iron Oxide C33-5198	2.00
Mica M-RP	15.00
Magnesium Myristate	9.00
Methyl Paraben	0.20
Propyl Paraben	0.10

Phase B:	
Octyldodecyl Stearoyl Stearate/Ceraphyl 847	6.95
Polyglyceryl-3 Diisostearate/Emerest 2452	0.50
Cetyl Palmitate	0.50
Tocopherol (and) Ascorbyl Palmitate/Oxyxyn LM	0.05

Procedure:

Combine the pigments and fillers with tumbling agitation. Pulverize using a hammer mill twice through an 0.027" screen. Combine the oil phase. Heat to 70C until homogeneous. Spray onto batch while agitating.
Formula P4-25-1

Eye Shadow

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Talc 141	19.10
Lithium Stearate	2.50
Kaolin 2457	5.00
Calcium Silicate/Microcel E	0.50
Bismuth Oxychloride (and) Carmine/Bicrona Carmine	2.60
Bismuth Oxychloride/Biron B-50	2.00
Methyl Paraben	0.20
Propyl Paraben	0.10

Phase B:	
Mica (and) Iron Oxide/Colorona Passion Orange	55.00

Phase C:	
Mineral Oil (and) Lanolin Alcohol/Amerchol L-101	11.00
Lanolin Alcohol/Super Hartolan	1.00
White Petrolatum	1.00

Procedure:

Combine Phase A. Pulverize with a hammer mill, passing twice through a 0.027" herring bone screen. Add Phase B with gentle agitation. Combine Phase C. Heat to 70C. Spray onto batch while agitating bulk. Pass entire batch through a jump gap.

Formula P3-79-3

SOURCE: Rona/EM Industries, Inc.: Suggested Formulations

Pressed Powder

<u>Raw Materials:</u>	<u>Wt%</u>
Talc Supra A	53.54
Nylon-12	10.00
Lecithin treated sericite	10.00
Lecithin treated mica	10.00
Amihope LL	5.00
Zinc stearate	3.00
Isopropyl lanolate	2.70
Hydroxylated lanolin	1.50
Isopropyl isostearate	1.20
Eldew CL-301	1.00
Butyl stearate	0.60
Germall II	0.30
Methylparaben	0.20
Propylparaben	0.10
Cosmetic brown 3277	0.34
Cosmetic Brown 1985	0.32
Cosmetic brown 1654	0.18
D&C red 30 lake	0.02
Formula PP-EL01	

Pressed Powder

<u>Raw Materials:</u>	<u>Wt%</u>
Talc Supra A	52.49
Nylon-12	9.80
Lecithin trereated sericite	9.80
Lecithin treated mica	9.80
Amihope LL	4.90
Zinc stearate	2.94
Isopropyl lanolate	2.65
Hydroxylated lanolin	1.47
Isopropyl isostearate	1.18
Eldew CL-301	2.95
Butyl stearate	0.59
Germall II	0.29
Methylparaben	0.20
Propylparaben	0.10
Cosmetic brown 3277	0.33
Cosmetic brown 1985	0.31
Cosmetic brown 1654	0.18
D&C red 30 lake	0.02
Formula PP-EL03	

SOURCE: Ajinomoto U.S.A., Inc.: Eldew CL-301 Applications

Pressed Powder

<u>Raw Materials:</u>	<u>Wt%</u>
Talc Supra A	53.54
Nylon-12	10.00
Lecithin treated sericite	10.00
Lecithin treated mica	10.00
Amihope LL	5.00
Zinc stearate	3.00
Isopropyl lanolate	2.70
Hydroxylated lanolin	1.50
Isopropyl isostearate	1.20
Eldew CL-301	1.00
Butyl stearate	0.60
Germall II	0.30
Methyl paraben	0.20
Propyl paraben	0.10
Cosmetic brown 3277	0.34
Cosmetic brown 1985	0.32
Cosmetic brown 1654	0.18
D&C red 30 lake	0.02
Formula PP-EL01	

Lipstick

<u>Raw Materials:</u>	<u>Wt%</u>
A: Castor oil	60.0
Candelilla wax	4.8
Carnauba wax	2.0
Ozokerite	4.0
Caprylic/capric triglyceride	15.0
B: Mica	7.4
Yellow iron oxide	2.2
D&C Red #7	3.0
Amihope LL	1.6

Procedure:

Mix (A) ingredients at 80C. Mix (B) ingredients in a turbo-mixer until a fine & homogeneous dispersion is obtained. Add (B) to (A) and mix until uniform, then pour into molds.
Formula LP-203B

SOURCE: Ajinomoto U.S.A., Inc.: Amihope LL Applications

Purifying Clay Face Mask**Formulating Design and Advantages:**

This product removes imbedded impurities which smooths skin, cleans pores, brings a glow and removes dulling cells for a finer texture so skin has a radiant glow.

<u>Raw Materials:</u>	<u>Wt%</u>
Phase A:	
102 Magnabrite HV	4.5
Xanthan Gum	0.2
Water (Distilled)	63.2
Glycerin	4.0
Aloe Vera Gel	0.5
Propylene Glycol	1.5
Tween 60	0.6
Methyl Paraben	0.5
Phase B:	
Emulsifying Wax NF	5.0
Cetylstearyl Alcohol	0.5
Kester Wax K-48	2.0
Propyl Paraben	0.5
Phase C:	
Cera Bellina (Pg-3 Beeswax)	4.5
Green Chromium Oxide	0.5
Titanium Dioxide	2.0
Phase D:	
Titanium Dioxide	4.0
670 Bentonite NFBC	6.0

Procedure:

Heat and mix till homogeneous, Phase A to 80C. Heat and mix Phase B to 80C. Heat and mix Phase C till pigments are dispersed. Mix Phase B with Phase C, add BC to A at 80C under agitation. When emulsified, sprinkle a mixed Phase D into the AB&C phase and continue mixing till thoroughly dispersed, allow to cool while mixing. Pour at 55-60C.

Adaptation of Formula and its Influence on the Product:

Changes in clay concentration will reduce or increase drying time on the skin, which also changes the respective purifying qualities toward the skin. Moisturizing agents and/or other actives can be added to enhance the properties of this product.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Rejuvenating Skin Gel (Aqueous)

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Allantoin/Rona	0.20
Sorbitol/Hystar CG	5.00
Methyl-4-hydroxybenzoate	0.17
Water, demineralized	qs to 100.00
Phase B:	
Carbomer/Carbopol 940	1.20
Water, demineralized	38.80
Phase C:	
Tromethamine/Tris Amino	1.80
Water, demineralized	13.20
Phase D:	
Water, Lecithin, Dipalmitoyl Hydroxyproline, Phenoxy-ethanol, Tall Oil Sterol, Linoleic Acid, Tocopherol, Sodium Ascorbate, Methylparaben, Butylparaben, Ethylparaben, Propylparaben, Mannitol/ASC III/Rona	4.00

Procedure:

Dissolve Phase A. Disperse Carbopol 940 in the water of Phase B and homogenize. Dissolve the Tromethamine in the water of Phase C. Combine Phases B and C and homogenize. Incorporate Phase A while stirring and homogenize. Finally, incorporate Phase D and homogenize again.

Notes:

Yellowish-opaque gel

Viscosity: 63,000 cps (Brookfield RVT, Sp. C, 5 rpm) at 24C

SOURCE: Rona/EM Industries, Inc.: Formula 32-33/E

Replenishing Milk Cleanser

This cleanser is formulated specifically for facial skin. Its gentle cleansing and foaming properties are achieved without the use of soap-based ingredients and it is oil free. The Cremerol HMG improves the rub-in of the product and the texture of the foam and leaves a smooth afterfeel. Added emollience and moisturization is contributed by the cationic film-forming ability of Ucare Polymer JR-30M which leaves a lasting smoothness to the skin despite rinsing. Glucamate DOE-120 works synergistically with the other surfactants to build viscosity, improve foam and act as an anti-irritant.

Directions for Use: Wet hands and face. Work a small amount of cleanser in your hands to produce a lather. Massage lather into face, and then rinse.

Viscosity: 2,500 cps

pH: 6.8-7.2

Ingredients:

	<u>Wt%</u>
Deionized Water	35.0
Miracare 2MCAS (Cocoamphodiacetate (and) Sodium Lauryl Sulfate (and) Sodium Laureth Sulfate (and) Propylene Glycol)	35.0
Ucare Polymer JR-30M (1% aqueous) (Polyquaternium-10)	20.0
Cocamide DEA	2.0
Glucamate DOE-120 (PEG-120 Methyl Glucose Dioleate)	3.0
Glycol Distearate	1.5
Glucam E-10 (Methyl Gluceth-10)	3.0
Cremerol HMG (Hydroxylated Milk Glycerides)	0.5
Preservative	q.s.
Citric Acid	q.s.

Procedure:

In a separate premix container, prepare a 1% solution of Ucare Polymer JR-30M using the standard preparation method for this raw material. In the main container, add the Miracare 2MCAS and water and mix with moderate to slow agitation with a sweep blade. Heat to 70-80C. When uniform, slowly add the formula weight of the Ucare solution to the surfactant. When uniform, dissolve remaining ingredients in the order listed, waiting for each to dissolve before adding the next. Keep heating with adequate agitation for 10-15 minutes. Cool to room temperature and adjust pH with citric acid to 6.8-7.2.

SOURCE: Amerchol: Formulation T74-52-1

Skin Cleanser

This is an opaque lotion formula which is soap-free. Foaming and cleansing of oily skin is provided by the Avel S-35 CG, while a blend of emollient ingredients soften dry areas.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	10.00
	Methyl Cellulose/Methocel A4M	0.10
B	Deionized Water	32.00
C	Sodium Octoxynol-2 Ethane Sulfonate/	
	Avel S-35 CG	45.00
	Sodium Benzoate	0.20
	Tetrasodium EDTA	0.10
D	Petrolatum	5.00
	Octoxynol-3	1.30
	Mineral Oil	1.30
	Lanolin Alcohol	0.50
	Oleyl Alcohol	0.50
	Cocamide DEA/Mazamide 80	1.25
E	Imidazolidinyl Urea/Germall 115	0.25
	Deionized Water	0.25
F	Fragrance	Q.S.
	Citric Acid or TEA to pH 6.0-7.0	Q.S.

Procedure:

Heat the part A water to >80C. Disperse the methyl cellulose in the hot water with good agitation. Add the part B water as ice or as freezing cold water. Hold the batch temperature <5C for 30-40 minutes to get complete hydration of the methyl cellulose. Add the part C ingredients in order and heat the batch to 65-70C. Blend the part D ingredients in a side vessel, heating to 65-70C. Add part D to the batch with rapid agitation to form the emulsion. Maintain this agitation as the batch is cooled to 40-45C. Blend the part E ingredients in a side vessel and add to the batch. Add the fragrance and adjust the pH to 6.0-7.0.

SOURCE: PPG Industries, Inc.: Formulation K-105

Skin Cleanser

This is an opaque lotion formula which is soap-free. Foaming and cleansing of oily skin is provided by Avanel S-35 CG and Mafo CAB, while a blend of emollient ingredients soften dry areas.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	47.70
	Hydroxypropyl Methylcellulose/Methocel 40-100	0.10
	Tetrasodium EDTA	0.10
	Triethanolamine	0.05
B	Sodium Octoxynol-2 Ethane Sulfonate/	
	Avanel S-35 CG	32.00
	Cocamidopropyl Betaine/Mafo CAB	10.00
C	Petrolatum	5.00
	Lanolin Alcohol	0.50
	PEG-7 Glyceryl Cocoate/Mazon 159	1.30
	Cetearyl Alcohol (and) Ceteareth-20/Maco1 124	2.00
	Cocamide DEA/Mazamide 80	1.25
D	Preservative	Q.S.
	Fragrance	Q.S.
	Citric Acid or TEA to pH 6.0-7.0	Q.S.

Procedure:

Disperse the hydroxypropyl methylcellulose in the part A water at ambient temperature by mixing for >10 minutes. Add the tetrasodium EDTA and the TEA to raise the pH above 8.5 and initiate hydration of the hydroxypropyl methylcellulose. Mix for at least 20 minutes while heating the batch to 60-65C. Add the part B ingredients in order, maintaining the batch at 60-65C. Blend the part C ingredients in a side vessel, heating to 60-65C. Add part C to the batch with rapid agitation to form the emulsion. Maintain this agitation as the batch is cooled to 40-45C. Add the preservative and fragrance, and adjust the pH to 6.0-7.0.

SOURCE: PPG Industries, Inc.: Formulation K-106

Skin Gel(O/W)
with ASC III

<u>Raw Materials:</u>		<u>Wt%</u>
A Almond oil (Sweet Almond (Prunus Amygdalus Dulcis) Oil		7.00
Miglyol 812 neutral oil (Caprylic/Capric Triglyceride)		4.00
Oxyxex K liquid (Art. No. 108324) (PEG-8 (and) Tocopherol (and) Ascorbyl Palmitate (and) Ascorbic Acid (and) Citric Acid)		0.50
Luvitol EHO (Cetearyl Octanoate)		4.50
Eutanol G (Octyldodecanol)		5.00
Cetiol V (Decyl Oleate)		5.00
B Sorbitol F liquid (Art. No. 102993)		4.00
Tris(hydroxymethyl)-aminomethane (Art. No. 108386) (Tromethamine)		0.40
Preservatives		q.s
Water, demineralized	ad	100.00
C Pemulen TR-1 (Acrylates/C10-30 Alkyl Acrylate Cross-polymer)		0.40
Water, demineralized		29.60
D ASC III (Art. No. 110154) (Lecithin (and) Dipalmitoyl Hydroxyproline (and) Beta-Sito-Sterol (and) Linoleic Acid (and) Tocopherol (and) Sodium Ascobate (and) Mannitol		4.00

Procedure:

Disperse the Pemulen TR-1 in the water of phase C and let swell. Incorporate phase B into phase C while homogenizing. Dissolve phase A and add small amounts to phases B/C during homogenization. Add phase D and homogenize again.

Note:

pH23C=6.3

Viscosity 21,000 mPas (Brookfield RVT, spindle C, 5 rpm) @ 23C

Samples contain as preservatives:

0.05% Propyl-4-hydroxybenzoate (Merck Art. No. 107427)

0.15% Methyl-4-hydroxybenzoate (Merck Art. No. 106757)

SOURCE: Rona-Merck: Formulation 14-37/G

Skin Rejuvenating Emulsion

The Glucate SS/Glucamate SSE-20-based emulsion has an enriched oil phase with moisturizers and emollients such as Cremerol HMG. This composition provides a long-lasting softness to the skin. Kytamer PC has superior humectant properties.

Viscosity: 6,300 cps (20C, LVT, 3, 12 rpm)

pH: 5.5 to 6.5

Ingredients:Wt%

Phase A:

Glucate SS (Methyl Glucose Sesquistearate)	1.50
Glucamate SSE-20 (PEG-20 Methyl Glucose Sesquistearate)	1.50
Promulgen D (Cetearyl Alcohol (and) Ceteareth-20)	2.00
Glyceryl Stearate	1.00
Cetearyl Octanoate	6.00
Squalane	4.00
Cremerol HMG (Hydroxylated Milk Glycerides)	1.00

Phase B:

Kytamer PC (Chitosan PCA)	0.15
Deionized Water	q.s.
Glucam P-10 (PPG-10 Methyl Glucose Ether)	1.00

Phase C:

Saccharide Isomerate	1.00
Preservative	q.s.

Procedures:

Disperse the Kytamer PC with gentle heating (approx. 50C). Heat phase A and phase B to 75C and add phase B to phase A. Cool while stirring to 35C. Add other ingredients. Adjust pH.

SOURCE: Amerchol: Formulation E952-101-2

Cleansing Emulsion for Towelettes (With AHA Ester)Raw Materials:Wt%

Imwitor 380 (Glyceryl Cocoate/Citrate/Lactate)	1.00
Ampholyt JB 130K (Cocamidopropyl Betaine)	1.00
Preservative	q.s.
Water	up to 100.00

Preparation:

All ingredients are mixed together at high speed with Ultra Turrax.

SOURCE: Creanova Inc.: Formulation 1.4F

Skin Smoother Gel**Concept Statement:**

A skin smoothing gel containing Rita HA C-1-C and Tensine to help cover wrinkles and fine lines.

<u>Ingredients:</u>	<u>Wt%</u>
1. Distilled/Deionized Water	70.15
2. Acritamer 940 (Carbomer)	0.50
3. SD Alcohol 40	10.00
4. Methylparaben	0.10
5. Distilled/Deionized Water	10.00
6. Diazolidinyl Urea	0.15
7. Rita PEO-3 (PEG-23M)	0.50
8. Ritasil 190 (Dimethicone Copolyol)	1.00
9. Rita HA C-1-C (Sodium Hyaluronate)	2.00
10. NaOH 20%	1.10
11. Tensine (Wheat Protein)	5.00
12. FD & C Blue #1 @ 1%	q.s.
13. Fragrance	q.s.

Compounding Procedure:

Disperse item 2 in item 1. Neutralize with item 10. Dissolve item 4 in item 3 and add to gel. Dissolve items 6 and 7 in item 5, add items 8 and 9 and add to gel. Add items 11-13 and mix until uniform.

Formulation Ref. No. 123-16C

Liposome Serum**Concept Statement:**

A heavy load liposome serum containing Rovisome C, Tensine, and Reffermine for facial firming attributes.

<u>Ingredients:</u>	<u>Wt%</u>
1. Distilled/Deionized Water	63.75
2. Rovisome C (Magnesium Ascorbyl Phosphate & Lecithin)	20.00
3. Tensine (Wheat Protein)	5.00
4. Raffermin (Hydrolyzed Soy Flour)	3.00
5. Glycerine	5.00
6. Rita PEO-3 (PEG-23M)	3.00
7. DMDM Hydantoin	0.25

Compounding Procedure:

Disperse item 6 in item 1. Mix until uniform. Add items 2-5 and item 7 and mix.

Formulation Ref. No. 123-55B

SOURCE: R.I.T.A. Corp.: Suggested Formulations

Sparkling Skin Moisturizing Fluid with Microcapsules

This is a fluid containing attractive moisturizing beads in a light, greaseless aqueous base which exhibits sparkling clarity and smooth feel.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
Glycerin	2.50
Hydrogenated Starch Hydrolysate (70%)/Hystar CG	2.50
Methylparaben	0.10
Part B:	
Deionized Water	83.35
Carbomer/Carbopol ETD 2050	0.25
Part C:	
Deionized Water	10.00
Sodium Hydroxymethyl Glycinate/Suttocide A	0.30
PVP (K30)	0.10
Disodium EDTA	0.05
Benzophenone-4	0.05
Part D:	
Mineral Oil in Gelatin Microcapsules/LipoPearls	0.80

Properties:

pH: 5.3-6.0

Viscosity (cP) at 25C: 1,500-3,000

Yield Value: 140-200

Clarity (%T): 90-94

Preparation Procedure:

1. Part A: Using agitation, dissolve methylparaben in a mixture of the glycerin and Hystar using shear.
2. Part B: In a separate vessel, disperse Carbopol ETD 2050 polymer into the vortex of rapidly agitating water. When dispersed, reduce agitation and mix until homogeneous.
3. Add Part A to Part B (Carbopol dispersion).
4. In a separate vessel, blend Part C ingredients. Mix until homogeneous.
5. Using paddle-type agitation, add Part C to Part B. Mix to produce a clear fluid.
6. Using paddle type agitation, add Part D to neutralized fluid until microcapsules are well dispersed.

SOURCE: B.F. Goodrich Co.: Foamulation C0055

Super Moisturizing Gel

This clear gel provides moisture to the skin. The addition of Hypan SA 100H in this formulation helps stabilize the viscosity of the product while adding to the clarity of the gel, eliminates tackiness and leaves the skin with an elegant feel. Lipo/DNS Completech MBAC-EA helps smooth out the skin and eliminate wrinkles in the area of the eye.

<u>Sequence:</u>	<u>Raw Material:</u>	<u>Wt%</u>
1	Deionized Water	21.75
1	Methylparaben	0.25
2	Liponic EG-1	5.00
2	Hypan SA-100H	0.10
3	Carbopol ETD 2001 (2% Aq. Disp'n.)	30.00
4	Deionized Water	1.00
4	Triethanolamine, 99%	0.60
5	Lubragel MS	25.00
6	Deionized Water	1.00
6	Unicide U-13	0.30
7	Hylacure, 1% Sol'n	5.00
8	Deionized Water	8.50
8	DNS Completech MBAC-EA	1.50

Procedure:

1. Premix Sequence #1 with overhead mixer while heating to 80C until Methylparaben is solubilized.
2. Premix Sequence #2 and add to Sequence #1 at 80C on overhead mixer using medium/high agitation.
3. Add Sequence #3 to batch holding temperature at 80C.
4. Premix Sequence #4 and add to batch at 80C mixing with overhead mixer at medium speed until completely hydrated without (fish eyes) noticed (approximately 20 minutes). Cool to 70C.
5. Add Sequence #5 without heating to batch held at 70C with medium speed on overhead mixer. Reduce temperature to 35C.
6. At 35C add premixed Sequence #6 to batch at low speed while cooling to 25C.
7. At 25C add Sequence #7 to batch at low speed.
8. Premix Sequence #8 until into solution and add to batch while mixing at low speed with sweep blade.

SOURCE: Lipo Chemicals, Inc.: Formulation No. 867

Timiron Silk Color Corrector

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Ceteareth-6 (and) Stearyl Alcohol/Cremophor A6	1.00
Ceteareth-25/Cremophor A25	1.00
Glyceryl Monostearate, Pure	2.50
Cetearyl Octanoate/Luvitol EHO	7.00
Mineral Oil Light 90 SUS/Blando1	3.00
Cetyl Alcohol	1.50
Dimethicone/100cs./Dow Corning 200 Fluid	0.10
Propyl Paraben	0.10
Phase B:	
Deionized Water	73.05
Glycerine USP	3.00
Methyl Paraben	0.20
Titanium Dioxide (and) Mica/Timiron Silk Green	5.00
Phase C:	
Fragrance	0.25
Phase D:	
Imidazolidinyl Urea/Germall 115	0.30
Deionized Water	2.00

Procedure:

Heat Phase A and Phase B separately to 70-75C with stirring. When homogeneous, the water phase is added to the oil phase at 70-75C with propeller mixer agitation. After maintaining temperature for 15 minutes, cool to 55C. Homogenize. Continue to cool to 45C with stirring. Add Phase C and combined Phase D. Cool to 30C.

Notes:

The Timiron Silk Green color corrector is used under makeup to hide red blotchy areas on the face. Timiron Silk Gold will mask bluish discolorations, and combined with Timiron Silk Red, provide a brighter appearance to the complexion.

SOURCE: Rona/EM Industries, Inc.: Formula EM3-45-1

Under Eye Gel**Concept Statement:**

A skin smoothing gel containing Rita HA C-1-C and Tensine to help cover wrinkles and fine lines.

Ingredients:

	Wt%
1. Distilled/Deionized Water	70.15
2. Acritamer 940 (Carbomer)	0.50
3. SD Alcohol 40	10.00
4. Methylparaben	0.10
5. Distilled/Deionized Water	10.00
6. Diazolidinyl Urea	0.15
7. Ritasil 190 (Dimethicone Copolyol)	1.00
8. Rita HA C-1-C (Sodium Hyaluronate)	2.00
9. NaOH 20%	1.10
10. Tensine (Wheat Protein)	5.00

Compounding Procedure:

Disperse item 2 in item 1. Neutralize with item 9. Dissolve item 4 in item 3 and add to gel. Dissolve item 6 in item 5, add items 7 and 8 and add to gel. Add item 10 and mix until uniform. Formulation Ref. No. 123-7A

Skin Smoother Gel**Concept Statement:**

A skin smoothing gel containing Rita HA C-1-C and Tensine to help cover wrinkles and fine lines.

Ingredients:

	Wt%
1. Distilled/Deionized Water	70.15
2. Acritamer 940 (Carbomer)	0.50
3. SD Alcohol 40	10.00
4. Methylparaben	0.10
5. Distilled/Deionized Water	10.00
6. Diazolidinyl Urea	0.15
7. Ritasil 190 (Dimethicone Copolyol)	1.00
8. Rita HA C-1-C (Sodium Hyaluronate)	2.00
9. NaOH 20%	1.10
10. Tensine (Wheat Protein)	5.00
11. FD&C Blue #1 @ 1%	q.s.
12. Fragrance	q.s.

Compounding Procedure:

Disperse item 2 in item 1. Neutralize with item 9. Dissolve item 4 in item 3 and add to gel. Dissolve item 6 in item 5, add items 7 and 8 and add to gel. Add items 10, 11 and 12 and mix until uniform. Formulation Ref. 123-7B

SOURCE: R.I.T.A. Corp.: Suggested Formulations

Undereye and Spot Concealer Makeup

This undereye and spot concealer makeup can be applied either from an automatic unit containing a brush for application or from a tube with a narrow opening. The urethane polymer contributes to the long lasting film forming properties while providing improved adhesion to the spot or area being covered. It is also a good substitute for the pigment suspending capabilities of colloidal clay, so common to these types of products.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
1. Deionized Water	58.95
2. Methylparaben NF	0.10
3. Hydroxypropyl Methyl Cellulose/Methocel 40-202	0.20
4. Triethanolamine (99%)	1.00
5. DL-Panthenol USP	0.30
6. Urethane Polymer/Avalure UR 445 Polymer	2.50
7. Glycereth-26/Protachem GL-26	4.50
Part B:	
8. Mica/Sericite GMS-4C	5.00
9. Kaolin 2457	0.50
10. Titanium Dioxide 3328 USP Anatase type	3.20
11. Iron Oxides/C33-7715 Cosmetic Brown	0.50
12. Iron Oxides/C33-7738 Cosmetic Russet	0.10
13. Iron Oxides/C33-7773 Cosmetic Yellow	0.40
14. Iron Oxides/C33-7775 Cosmetic Red	0.10
15. Iron Oxides/C33-7734 Cosmetic Black	0.05
Part C:	
16. Stearic Acid/Emersol 132	3.00
17. Glyceryl Stearate/Protachem GMS-450	3.00
18. Isopropyl Palmitate/Protachem IPP	2.00
19. Octyldodecyl Neo-Pentanoate/Elfac 1205	1.00
20. Octyldodecanol/Eutanol G	2.00
21. Grape Seed Oil/Lipovol G	0.50
22. Jojoba Oil/Lipovol J	3.00
23. Propylparaben	0.10
Part D:	
24. Cyclomethicone/Dow Corning 245 Fluid	7.00
25. Tocopheryl Acetate/Vitamin E Acetate	0.10
26. Retinyl Palmitate/Vitamin A Palmitate	0.10
27. Aloe Extract/Actiphyte of Aloe Vera	0.10
28. Germaben II Preservative	0.50

Properties:

Color, Odor, Appearance: Pigmented, moderately thick cream
with slight wax-like odor

pH: 7.5-8.0

Viscosity cp at 25C: 5,000-6,000

SOURCE: BF Goodrich Specialty Chemicals: Formulation A0003(Cont)

Undereye and Spot Concealer Makeup (Continued)

Preparation Procedure:

Part A:

1. Add the deionized water to a suitable kettle and then add the methylparaben.
2. Heat the water to 35C to dissolve the methylparaben and then add the methocel.
3. Continue mixing until the methocel is dispersed and no lumps appear.
4. Add the triethanolamine and mix until the solution is clear. Add the Panthenol and mix until dissolved.
5. Add the Avalure UR 445 polymer and mix until it is dispersed and a colloidal white solution occurs.
6. Add the Glycereth-26 and heat to 75C.

Part B:

7. Mix all of the powders together and mill if necessary until the blend is uniform and no streaks or particles of pigment are present.
8. Add this powder blend to Part A and mix until ready to combine with Part C.

Part C:

9. Mix all of the ingredients of Part C in a suitable vessel and heat to 75C.
10. After all of the ingredients are completely melted, add Part C to Parts A & B and continue mixing until the emulsion forms.

Part D:

11. Begin cooling the combined batch to 70C and add the cyclomethicone. Mix well to insure that the cyclomethicone is brought into the emulsion and is uniformly dispersed. Continue cooling and mixing.
12. Add vitamins at 45C and mix well.
13. Add aloe and mix well.
14. Add the Germaben II and continue cooling to room temperature.

SOURCE: BF Goodrich Specialty Chemicals: Formulation A0003

Water-in-Oil Milk

<u>Ingredients:</u>	<u>Wt%</u>
A: Arlacel 582	4.0
Arlatone T	1.0
Arlamol HD	8.0
Paraffin oil	5.5
Isopropyl myristate	7.0
B: Atlas G-2330	1.25
Propylene glycol	1.25
MgSO ₄ -7H ₂ O	0.7
Preservatives	q.s.
Water	71.3
C: Perfume	q.s.

Manufacture:

1. Heat A and B to 65C separately.
2. Add B to A whilst stirring thoroughly.
3. Homogenise.
4. Cool to 35C with continuous homogenisation.
5. Add perfume.

Comments:

Viscosity: 22,000 mPas (Brookfield LVT, spindle E, 6 rpm)

Formulation F44-12-1

Oil-in Water Tropic Milk

<u>Ingredients:</u>	<u>Wt%</u>
A: Arlatone 983	1.1
Brij 76	1.0
Arlamol HD	2.0
Arlamol S7	3.0
B: Atlas G-2330	1.25
Propylene glycol	1.25
Preservatives	q.s.
Carbopol 934 (a)	0.3
Demineralised water	90.1
C: Perfume	q.s.
(a) Neutralise the mixture with sodium hydroxide solution to pH 6.5	

Manufacture:

1. Heat A and B separately to 70C.
2. Add A to B while stirring.
3. Homogenise.
4. Neutralise with a 30% NaOH solution to pH 6.5.
5. Cool to 35C whilst stirring continuously.
6. Add C.

Comments:

Viscosity: 34,000 mPas (Brookfield LVT, spindle F, 6 rpm)

This very light emulsion is low in oil phase and emulsifier content and gives a strong cooling effect on the skin.

Formulation F44-12-5

SOURCE: ICI Surfactants: Suggested Formulations

Water-in-Oil-in-Water Face Moisturiser
(2-Step Production)

<u>Ingredients:</u>	<u>Wt%</u>
Primary Emulsion W1/O:	
A Arlacel 1690	3.3
Atlas SCS 2054	3.0
Arlamol HD	15.0
Arlamol M812	14.0
B Water	64.7
Preservative	q.s.
Secondary Emulsion W1/O/W2 (50/50):	
A Primary Emulsion W1/O	50.0
B Arlatone 2121	5.0
Preservative	q.s.
Water	44.6
Keltrol*	0.4

Manufacture:**Primary Emulsion W1/O:**

1. Slowly add B to A whilst stirring thoroughly (at room temperature).
2. Homogenise the mixture intensively for 5 minutes.

Secondary Emulsion W1/O/W2:

1. Heat B (without the Keltrol) to 80C.
2. Disperse the Keltrol in B whilst stirring thoroughly (keep the temperature at 80C).
3. Slowly add A to B whilst stirring thoroughly.
4. Allow to cool to room temperature whilst stirring gently.

Comments:

Viscosity: 15.900 mPa s (Brookfield LVT, spindle D, 6 rpm)

*Keltrol (Xanthan Gum, INCI)-Kelco

SOURCE: ICI Surfactants: Formulation F41-5-17

Waterproof Special Effects Mascara

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
C9-11 Isoparaffin/Soltrol 100	30.95
Polyethylene 6A	11.00
Candelilla Wax	4.50
Hydroxylated Lanolin/OHlan	0.25
Phase B:	
Pentaerythrityl Rosinate/Pentalyn C	2.00
C9-11 Isoparaffin/Soltrol 100	5.00
Phase C:	
Methyl Paraben	0.20
Propyl Paraben	0.10
Phase D:	
Zinc Stearate	1.00
Phase E:	
Petroleum Distillates (and) Quaternium-18 Hectorite (and) Propylene Carbonate/Bentone Gel SS71	35.00
Phase F:	
Pearl Pigment/Rona	10.00

Procedure:

Prepare Phase B in advance; combine in a closed vessel. Heat to 65-70C with constant Lightnin' mixer agitation until clear. Combine Phase A in a closed vessel. Heat to 90-95C with Lightnin' mixer agitation. When clear, add to remaining phases in order, insuring that each is fully dispersed before proceeding. Cool to 30C with sidesweep agitation. At 55C, check for solvent loss and adjust if necessary.

Note:

Pearl Pigment Combinations:

A: Dichrona BG

B: Colorona Dark Blue

C: Colorona Magenta

D: Colorona Majestic Green

E: Colorona Dark Blue

SOURCE: Rona/EM Industries, Inc.: Formula AN251

Section V

Creams

All Purpose Cream

<u>Raw Materials:</u>	<u>Wt%</u>
A: Mineral oil #70	21.6
Paraffin (mp 42-44C)	8.0
Cetyl alcohol	5.0
Ceresin	10.0
Tocopheryl acetate	0.2
Allantoin	0.2
Sorbitan stearate	2.0
Polysorbate-20	3.0
B: Ajidew N-50	3.0
Propylene glycol	2.0
Preservatives	q.s.
Water	balance

Procedure:

Heat (A) and (B) respectively to 80-85C and dissolve all ingredients. Add (B) gradually to (A) with stirring. Cool to 40C with stirring.

pH: 5.4

Formula No. SY-19-1

Cold Cream

<u>Raw Materials:</u>	<u>Wt%</u>
A: Mineral oil	20.0
Paraffin	9.0
IPP	3.0
Cetyl alcohol	1.0
Lanolin hydrogenated	2.0
Ceresin	10.0
Sorbitan stearate	2.7
Polysorbate-80	2.3
B: Ajidew N-50	3.0
Preservatives	q.s.
Water	balance

Procedure:

Heat (A) and (B) respectively to 80-85C and dissolve all ingredients. Add (B) gradually to (A) with stirring. Cool to 40C with stirring.

Formula No. SC-74

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Anti-Cellulite Cream**Formulating Design and Advantages:**

Actives specifically developed to reduce the signs and quantity of cellulite are incorporated into this quick penetrating, non-greasy cream. The use of Hexanediol Behenyl Beeswax allows for a stable emulsion using a high concentration of low viscosity oils. Orange Wax in this formula is also an active due to similar chemistry. The claims for Centerchem's anti-cellulite products are based on groups of chemicals which are also found in Orange Wax, for example; Steroids, Flavonones, Flavonols and Cinnamates.

Raw Materials:

	<u>Wt%</u>
Phase A:	
Hexanediol Behenyl Beeswax	3.0
Glycol Stearate	4.0
Glycerol Monostearate	3.0
Orange Wax	4.0
Isopropyl Palmitate	2.0
Silicone Oil 556	2.0
Emulsifying Wax NF	2.0
Cetareth-20	1.5
Eucalyptus Oil	0.5
Caprylic/Capric Triglyceride	2.5
Phase B:	
Water (Distilled)	50.1
Carbopol 940	0.2
Glycerin	3.0
Pronalan Anticellulite	10.0
Ivy Extract	5.0
Seaweed Extract	5.0
Triethanolamine	0.2
Aloe Vera Gel	1.0
Germaben II	1.0

Procedure:

Heat Phase A to 75 to 80C. Heat and mix Phase B to 75C. Emulsify by adding Phase A to Phase B. Add the preservative and mix while cooling. Pour into containers at 40C.

Adaptation of Formula and its Influence on the Product:

There is room for changing this product by the use of other actives which produce similar claims. The use of other plant oils will not dramatically alter the finished product. Worth mentioning is the ability of Orange Wax to mask the aroma of the eucalyptus oil producing a product of low fragrance.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Antiwrinkle Night Cream**Concept Statement:**

A non-greasy night cream containing Pationic SBL to moisturize and smooth skin, and Tensine and Reductine to reinforce skin firmness.

Ingredients:

	<u>Wt%</u>
1. Distilled/Deionized Water	58.00
2. Propylene Glycol	5.00
3. Mineral Oil	12.00
4. Lanolin X-Tra Deo	2.00
5. Petrolatum	5.00
6. Butylated Hydroxyanisole	0.10
7. Pationic SBL (Sodium Behenoyl Lactylate)	2.00
8. Ritacetyl Alcohol 50/50 (Cetearyl Alcohol)	3.50
9. Rita SA (Stearyl Alcohol)	1.50
10. Phenonip	0.50
11. Fragrance	q.s.
12. Tensine (Wheat Protein)	5.00
13. Reductine (Oat Protein)	5.00

Compounding Procedure:

Mix items 1 and 2 and heat to 80C. Combine items 3 to 9 and heat to 80C. Add oil phase to water phase and homogenize. Cool to 35C and add items 10 to 13.

Formulation Ref. No. 122-81B

Cleansing Cream**Concept Statement:**

A cleansing cream with Pationic SCL to provide skin moisture and smoothness, and a pleasant feel.

Ingredients:

	<u>Wt%</u>
1. Pationic SCL (Sodium Cocoyl Lactylate)	0.50
2. Rita Cetearyl Alcohol 50/50 (Cetearyl Alcohol)	1.60
3. Rita GMS (Glyceryl Stearate)	4.00
4. Mineral Oil	20.00
5. Ritachol (Mineral Oil and Lanolin Alcohol)	4.00
6. Distilled/Deionized Water	67.40
7. Glycerine	5.00
8. DMDM Hydantoin	0.20

Compounding Procedure:

Combine items 1-5 and heat to 80C. Combine items 6 and 7 and heat to 80C. Add oil phase to water phase. Cool to 35C and add item 8.

Formulation Ref. No. 120-205A

SOURCE: R.I.T.A. Corp.: Suggested Formulations

Cold Cream (O/W)

<u>Ingredients:</u>	<u>Wt%</u>
Polysynlane	32.0
Mineral Oil	4.0
Paraffin Wax	4.0
I.P.M.	8.0
Beeswax	3.0
Lanolin	8.0
Propylene Glycol	4.0
Potassium Hydroxide	0.3
Arlacel 40	2.5
P.O.E. Sorbitol Beeswax	1.0
Stearic Acid	1.5
Perfume & Preservatives	q.s.
Water	ad. 100.0

Hand Cream

<u>Ingredients:</u>	<u>Wt%</u>
Glyceryl Monostearate (S.E.)	4.0
Stearic Acid TP	4.0
Cetyl Alcohol	2.0
Lanolin	2.0
Polysynlane	4.0
Propylene Glycol	3.0
Triethanolamine	1.0
Preservatives	0.2
Water & Perfume	ad. 100.0

Ointment Cream

<u>Ingredients:</u>	<u>Wt%</u>
Cetyl Alcohol	3.5
Stearyl Alcohol	7.0
Sodium Lauryl Sulfate	2.0
Polysynlane	8.5
Sesame Oil	5.0
Glycerine	5.0
Preservative	0.2
Water & Perfume	ad. 100.0

SOURCE: Polyester Corp.: Suggested Formulations

Cream

Formula SK-8b is a glossy cream with medium-high viscosity and is made with a high content of mineral oil and stearyl alcohol. Viscosity control is excellent, and this emollient formulation could make a cold cream, moisturizer, or skin cleanser. The formulation is thermally stable.

<u>Ingredients:</u>		<u>Wt%</u>
A	Light mineral oil	15.0
	Stearyl alcohol	5.0
	Brij 721 Steareth-21	2.5
	Brij 72 Steareth-2	2.5
B	Water, deionized	74.8
C	Preservative	q.s.
D	Fragrance	0.2

Preparation:

Heat (A) to 70C and (B) to 72C. Add (B) to (A) and agitate with propeller. Add (C) below 50C and (D) at 35C. Add water to replace that lost by evaporation. Homogenize.
Formula SK-8b

Oil-in-Water High Mineral Oil Cream

This formula is a very viscous, glossy cream with excellent phase stability for at least eight weeks at 5C, 40C, 50C, and room temperature, and at least five freeze-thaw cycles.

<u>Ingredients:</u>		<u>Wt%</u>
A	Light mineral oil	70.0
	Brij 721	3.7
	Brij 72	3.3
B	Water, deionized	22.7
	Carbomer 934	0.1
C	Sodium hydroxide solution, 10% aqueous	0.1
D	Preservative	q.s.
E	Fragrance	0.1

Preparation:

Heat (A) to 70C and (B) to 72C. Add (A) to (B) slowly with moderate anchor type agitation. Add (C). Add (D) about 50C. Add (E) at 35C and replace water lost by evaporation.
Formula SK-10

SOURCE: ICI Surfactants: Suggested Formulations

Cream, O/W, with MPC-Milk Peptide Complex

<u>Raw Materials:</u>	<u>Wt%</u>
a) Emulgade SE	8.50
Lanette O	3.00
Myritol 318	4.00
Cetiol OE	2.00
Cetiol J 600	3.00
Phenonip	0.30
b) Water, distilled	63.90
Phenonip	0.30
Karion F liquid	5.00
c) Water, distilled	9.38
Na3-Citrate x 2H2O	0.12
MPC-Milk Peptide Complex	0.50

Manufacture:

- a) Melt and bring to approx. 70C.
- b) Bring to approx. 70C and add to a).
Continue stirring until cream has cooled to approx. 30C.
- c) Dissolve at room temperature and add to ab) with stirring.
Perfume, homogenize.

Cream, O/W, with Protectan

<u>Raw Materials:</u>	<u>Wt%</u>
a) Cutina MD	4.00
Cutina CP	4.00
Eumulgin B1	1.00
Eumulgin B2	1.00
Cetiol B	5.00
Phenonip	0.30
b) Water, distilled	70.40
Phenonip	0.30
Carbopol 940	0.50
Triethanolamine	0.50
Glycerin	3.00
c) Protectan	10.00

Manufacture:

- a) Melt and bring to approx. 70C.
- b) Bring to approx. 70C and stir into a).
Continue stirring until cooled to approx. 30C.
- c) Stir in.
Perfume, homogenize.

SOURCE: Chemisches Laboratorium Dr. Kurt Richter GmbH: Formulas

Cream, Type O/W

<u>Raw Materials:</u>	<u>Wt%</u>
A: Arlamol HD	10.00
Arlamol M 812	5.00
Stearyl alcohol	5.00
Arlacel 60	2.00
Phenonip	0.30
B: Water, distilled	60.30
Phenonip	0.30
G-2330	1.50
Keltrol	0.10
Arlatone 2121	5.50
C: Glycoderm (P)	10.00

Manufacture:

- A: Melt and bring to approx. 70C.
 B: Bring to approx. 70C and add to A with stirring.
 Continue stirring until cooled to approx. 30C.
 C: Stir in.
 Perfume, homogenize

Cream O/W for Daycare of Oily Skin

<u>Raw Materials:</u>	<u>Wt%</u>
A: Eumulgin 286	3.00
Cetiol J 600	5.00
Phenonip	0.30
B: Water, distilled	60.00
Carbopol 934	1.50
C: Water, distilled	18.40
Phenonip	0.30
Triethanolamine	1.50
D: Thiosome (P)	10.00

Manufacture:

Disperse b) with rapid stirring at room temperature until free from lumps. Heat to approx. 70C and add to a) with stirring. Continue stirring until cooled to approx. 30C; add c) and d).
 Perfume, homogenize.

SOURCE: Chemisches Laboratorium Dr. Kurt Richter GmbH; Suggested Formulations

Cream, Type O/W, with Phytodermin

<u>Raw Materials:</u>		<u>Wt%</u>
a)	Emulgade 1000 NI	8.00
	Novata AB	2.00
	Lanette O	2.00
	Cetiol OE	8.00
	Cetiol J 600	7.00
	Phenonip	0.30
b)	Water, distilled	62.40
	Phenonip	0.30
	Glycerin	5.00
c)	Phytodermin	5.00

Manufacture:

- a) Melt and bring to approx. 70C.
 b) Bring to approx. 70C and add to a) with stirring.
 Continue stirring until cooled to approx. 30C.
 c) Stir in.
 Perfume, homogenize.

Cream, Type W/O, with Phytodermin

<u>Raw Materials:</u>		<u>Wt%</u>
a)	Arlacel 1689	3.50
	Paraffinum subliquidum	8.00
	Arlamol HD	6.00
	Miglyol 812	2.00
	Isopropyl myristate	2.00
	Phenonip	0.30
b)	Water, distilled	62.90
	Phenonip	0.30
	Glycerin	4.00
	Magnesium sulfate	0.50
c)	Phytodermin	10.00
d)	Aerosil R 972	0.50

Manufacture:

- Add b) to a) with stirring at room temperature (25-30C).
 Add c) and d) to ab). Perfume, roll.

SOURCE: Chemisches Laboratorium Dr. Kurt Richter GmbH: Formulas

Emollient Cream

Glucate SS/Glucamate SSE-20 is used as the basic nonionic emulsifier system. Glucam E-10 is added for its humectance in this excellent white cream base formula.

Viscosity: 100,000 to 120,000 cps

pH: 5.5 to 6.5

<u>Ingredients:</u>	<u>Wt%</u>
Oil Phase:	
Glucate SS (Methyl Glucose Sesquistearate)	1.0
Glucamate SSE-20 (PEG-20 Methyl Glucose Sesquistearate)	2.0
Squalane	7.0
Glyceryl Stearate	1.5
Caprylic/Capric Triglyceride (and) Stearalkonium Hector- ite (and) Propylene Carbonate	8.0
Cera Alba	3.0
Water Phase:	
Glucam E-10 (Methyl Gluceth-10)	1.5
Deionized Water	q.s.
Preservative	

Procedures:

Heat both phases to 85C and add the water phase to the oil phase. Cool while stirring to 35C. Add other ingredients. Adjust pH.

Note: Homogenization is recommended.

SOURCE: Amerchol: Formulation E952-093-6

O/W Basic Cream with AHA-Esters

<u>Raw Materials:</u>	<u>Wt%</u>
A) Miglyol 812 (Caprylic/Capric Triglyceride)	16.00
Softisan 378 (Caprylic/Capric/Stearic Triglyceride)	5.00
Imwitor 375 (Glyceryl Citrate/Lactate/Linoleate/ Oleate)	5.00
Imwitor 928 (Glyceryl Cocoate)	3.00
Imwitor 370 (Glyceryl Stearate Citrate)	7.00
Antioxidant	q.s.
B) Glycerin	5.00
Preservative	q.s.
Water	up to 100.00
C) Fragrance	q.s.

Preparation:

(A) is heated up to 70 degrees C. (B) is brought to the same temperature and emulsified into (A). The cream is cooled while stirring, and at about 30 degrees C. the fragrance is added.

SOURCE: Creanova Inc.: Formulation 1.1R(1)

Face CreamIngredients:

	<u>Wt%</u>
Phase A:	
H ₂ O, Deionized	79.30
Carbopol 934	0.20
Propylene Glycol	2.00

Phase B:

Hest IS-2-O (Isosteareth-2 Octanoate)	5.00
Product SE-100 (Glyceryl Stearate & PEG-100 Stearate)	4.00
Hetan SS (Sorbitan Stearate)	2.50
Lanolin	1.60
Hest CSO (Cetearyl Octanoate)	3.00
Hetoxol J (Cetearyl Alcohol & Ceteareth-20)	0.60
Hest L-2-O (Laureth-2 Octanoate)	0.30

Phase C:

Sodium Hydroxide (10% Solution)	0.50
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Phase D:

Germaben IIE	1.00
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Specifications:

pH: 6.50

Visc. #4/12: 26,000 cps

Procedure:

1. In a stainless steel kettle, disperse Carbopol 934 into H₂O using a lightnin' type mixer.
2. When completely dispersed and free of lumps, add propylene glycol and heat to 75C while mixing.
3. In a separate kettle, combine Phase B and heat to 75C while mixing.
4. At 75C, add Phase B to Phase A. Mix until uniform.
5. Add Phase C. Mix well.
6. Cool to below 40C and add Phase D.

SOURCE: Heterene, Inc.: Formulation HC 94-148

High Gloss Cream, Type O/W, with Liposomes

<u>Raw Materials:</u>		<u>Wt%</u>
A) Dynacerin 660 (Oleyl Erucate)		7.00
Imwitor 370 (Glyceryl Stearate Citrate)		5.00
Imwitor 375 (Glyceryl Citrate/Lactate/Linoleate/Oleate)		5.00
Imwitor 928 (Glyceryl Cocoate)		3.00
Miglyol 812 (Caprylic/Capric Triglyceride)		2.00
Softisan 378 (Caprylic/Capric/Stearic Triglyceride)		2.00
Softisan 601 (Glyceryl Cocoate (and) Hydrogenated Coconut Oil (and) Cetareth-25)		4.00
Macadamia Nut Oil		3.00
Shea Butter		3.00
Finsolv TN (C12-15 Alkyl Benzoate)		3.00
Hombitec H (Titanium Dioxide)		1.00
Volatile Silicone Oil 344		0.20
B) Keltrol F (Xanthan Gum)		0.50
Methocel K 100 LV Premium (Methyl Cellulose)		0.50
Glycerin		5.00
Preservative		q.s.
Water	up to	100.00
C) Tocopherol Acetate		0.30
Fragrance		0.30
Natipide II (Water (and) Alcohol (and) Lecithin)		3.00

Preparation:

(A) is heated to about 70 degrees C. To form (B), Keltrol and Methocel are dispersed in water and stirred until homogeneous. (B) is brought to the same temperature and emulsified into (A). (C) is added at 30 degrees C.

Formulation 1.1T

Cream with Citric Acid Ester and Glycerol

<u>Raw Materials:</u>		<u>Wt%</u>
A) Imwitor 370 (Glyceryl Stearate Citrate)		3.00
Imwitor 375 (Glyceryl Citrate/Lactate/Linoleate/Oleate)		2.00
Miglyol 812 (Caprylic/Capric Triglyceride)		5.00
Imwitor 900 (Glyceryl Stearate)		4.00
Soft Paraffin		5.00
Cetyl Alcohol		4.00
B) Keltrol F (Xanthan Gum)		0.50
Glycerol		5.00
Preservative		q.s.
Water	up to	100.00

Preparation:

(A) is warmed up to ca. 70 degrees C. (B) is mixed until homogeneous, heated up to the same temperature, and emulsified into (A).

Formulation 1.1U

SOURCE: Creanova Inc.: Suggested Formulations

High Gloss Cream, Type W/O, with Almond Oil

<u>Raw Materials:</u>		<u>Wt%</u>
A) Softisan Gel (Bis-Diglyceryl Polyacyladipate-1 (and) Propylene Glycol Dicaprylate/Dicaprate (and) Stearalkonium Hectorite (and) Propylene Carbonate)		10.00
Miglyol 840 (Propylene Glycol Dicaprylate/ Dicaprate)		10.00
Dynacerein 660 (Oleyl Erucate)		2.00
Imwitor 780K (Isostearyl Diglyceryl Succinate)		5.00
Almond Oil		2.00
Shea Butter		2.00
B) Magnesium Sulfate		2.00
Preservative		q.s.
Water	up to	100.00
C) Tocopheryl Acetate		0.30
Perfume "Olivia"		0.30

Preparation:

(A) is warmed up to ca. 75 degrees C and stirred. (B) is brought to the same temperature and emulsified into (A). (C) is added at 30 degrees C.

Formulation 1.2M (1)

Care Cream with Skin Protection

<u>Raw Materials:</u>		<u>Wt%</u>
A) Imwitor 375 (Glyceryl Citrate/Lactate/Linoleate/ Oleate)		5.00
Imwitor 960K (Glyceryl Stearate SE)		5.00
Miglyol 812 (Caprylic/Capric Triglyceride)		7.00
Softigen 701 (Glyceryl Ricinoleate)		3.00
Cetyl Alcohol		2.00
B) Sorbitol		5.00
Natrosol 250 HR (Hydroxyethyl Cellulose)		0.30
Preservative		q.s.
Water	up to	100.00
C) Fragrance		q.s.

Preparation:

(A) is heated up to 75 degrees C. (B) is heated up to the same temperature and emulsified into (A). At 30 degrees C, (C) is added.

Formulation 1.1V

SOURCE: Creanova Inc.: Suggested Formulations

Light Moisturizing Cream for Dry Skin

Ultra light weight moisturizing cream. Leaves the skin with a soft satiny feel from the Liponate NPGC-2. Lipo/DNS Completetech MBAC-DS helps control the oiliness of the skin.

<u>Sequence:</u>	<u>Raw Material/INCI Name:</u>	<u>Wt%</u>
1	Deionized Water	63.35
1	Methylparaben	0.25
1	Trisodium EDTA	0.05
2	Carbopol 2984 (2% sol'n)	17.50
3	Liponate NPGC-2	4.00
3	Lipomulse 165	1.50
3	Lipocol C/Cetyl Alcohol	0.60
3	Propylparaben	0.10
3	Butylparaben	0.05
4	Deionized Water	1.00
4	Triethanolamine, 99%	0.35
5	Deionized Water	1.00
5	Unicide U-13/Imidazolidinyl Urea	0.25
6	Deionized Water	8.50
6	Completech MBAC-DS	1.50

Procedure:

1. Heat Sequence #1 to 75C. Mix with overhead mixer at medium speed until all ingredients are completely into solution.
2. Heat Sequence #2 to 75C and add to Sequence #1 with medium agitation (holding temperature at 75C).
3. Mix Sequence #3 together and heat to 75C, then add to batch with medium/high agitation.
4. Premix Sequence #4 ingredients and add to batch at 70-75C. Switch to moderate sweep and cool slowly to 35C.
5. At 35C add Sequence #5 to batch with low/medium speed on sweep until temperature cools to 25C.
6. Premix Sequence #6 together until completely into solution and then add to batch on sweep mixer.

SOURCE: Lipo Chemicals Inc.: Formulation No. 822

Light Night Cream

Designed for normal to oily skin, this emulsion features a light, dry feel.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
Acrylates/C10-30 Alkyl Acrylate Crosspolymer/ Pemulen TR-2	0.25
Carbomer/Carbopol Ultrez 10	0.50
Laneth-5 (and) Ceteth-5 (and) Oleth-5 (and) Steareth-5/ Solulan 5	1.00
Mineral Oil/Drakeol 21	10.00
Octyl Stearate/Cetiol 868	8.00
Part B:	
Glycerin/Pricerine 9083	2.00
Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Propylparaben (and) Butylparaben/Phenonip	2.00
Deionized Water	77.20
Part C:	
Sodium Hydroxide Solution (18% w/w)	0.40
Part D:	
Fragrance/Fruity Floral Scent NY-16	0.15

Properties:

pH: 5.0-5.1

Viscosity (cP) at 25C: 55,000-60,000

Appearance: Creamy white viscous emulsion

Preparation Procedure:

1. Combine Part A ingredients. Heat until completely liquid and mix until homogeneous. Add the powdered polymers to the liquid and mix until completely dispersed.
2. Combine Part B ingredients and mix until solution is complete. Add Part A to Part B with good mixing until the polymers hydrate well (about 15 minutes).
3. Add neutralizer slowly until thickening is observed. While the emulsion is still of mixable consistency, increase mixing until the emulsion is creamy white and homogeneous.
4. Finish by adding the fragrance and remaining neutralizer and mixing until homogeneous.

SOURCE: B.F. Goodrich Co.: Formulation P0053

Moisturizing Cream Cold Process W/O

Ingredients:	Wt%
Phase A:	
Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone Copolyol (and) Hexyl Laurate (Abil WE-09)	5.0
Mineral Oil	5.0
Caprylic/Capric Triglycerides (Tegosoft CT)	5.0
Isopropyl Myristate (Tegosoft M)	5.0
Silica (Degussa R812)	0.5
Phase B:	
Water	77.9
Sodium Chloride	0.8
Hydroxyethyl Cellulose (Tylose H20)	0.8
Preservatives	Q.S.
Perfume	Q.S.
Color	Q.S.

Procedure:

1. Mix the oils of Phase A together. Add the fumed silica to the oil phase with adequate agitation and ventilation. Mix well.
2. Dissolve the Hydroxyethyl Cellulose into the vortex of the agitating water phase. Allow the cellulose to fully hydrate prior to adding the sodium chloride. Mix until uniform.
3. Add Phase B slowly into Phase A with agitation.
4. Homogenize.
5. Preservatives, perfume and color can be added upon forming the emulsion.

**Barrier Cream
Cold Mix Formula**

Ingredients:	Wt%
Phase A:	
Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone Copolyol (and) Hexyl Laurate (Abil WE-09)	5.0
Decyl Oleate (Tegosoft DO)	5.0
Caprylic/Capric Triglycerides (Tegosoft CT)	5.0
Isopropyl Myristate (Tegosoft M)	5.0
Silica	0.5
Phase B:	
Sodium Citrate (solution)*	20.0
Water	58.7
Hydroxyethylcellulose	0.8
Phase C:	
Fragrance	Q.S.
Preservatives	Q.S.

*100 G Sodium Citrate/1 liter water.
pH adjusted to 5.0 with Citric Acid.

Procedure:

1. In a vessel, blend together the ingredients of Phase A until uniform.
2. In a separate vessel, disperse the Hydroxyethylcellulose into the water.
3. Add the Phase B slowly to Phase A with agitation.
4. Add Phase C, mix until dispersed.
5. Homogenize and dispense.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Moisturizing Day Cream

This emulsion utilizes Glucate SS/Promulgen D as the emulsifier pair. Cremerol HMG provides moisturization. Glucam E-20 and BioCare Polymer BHA-10 are incorporated for humectance and skin hydration. Ucon Fluid AP has specific emollient properties.

Viscosity: 100,000 to 120,000 cps

pH: 5.5 to 6.5

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Glucate SS	1.00
Promulgen D	1.50
Cetearyl Octanoate	6.00
Cyclomethicone	1.50
Cera Alba	1.50
Cremerol HMG	2.00
Octyl Methoxycinnamate	1.50
Butyl Methoxydibenzoylmethane	0.75
Ucon Fluid AP	1.50
Phase B:	
Acrylates/C10-30 Alkyl Acrylate Crosspolymer	0.20
Deionized Water	q.s.
Glucam E-20	2.00
Phase C:	
Biocare Polymer BHA-10	1.00
Tocopheryl Acetate	0.10
Phase D:	
Triethanolamine	q.s.
Preservative	

Procedures:

Disperse the carbomer in the water and add Glucam E-20. Heat phase A and phase B to 75C and add phase B to phase A. Add the triethanolamine while mixing and cool to 35C. Add other ingredients. Readjust the pH.

SOURCE: Amerchol: Formulation E952-095-6

Moisturizing Milk Creme with Monasil PLN

This formulation provides a high degree of substantivity and conditioning. It helps to minimize or alleviate dry skin conditions while leaving a smooth non-greasy after-feel.

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Monalac MPL	5.0
A	Monaquat SL-5	5.0
A	Water	57.2
A	Potassium Hydroxide (45%)	0.2
A	Monasil PLN	4.0
B	Monafax MAP 160	0.5
B	Monalac ML	20.0
B	Cetearyl Alcohol	5.1
B	Isopropyl Palmitate	3.0

Procedure:

Combine ingredients in both phases separately and heat to 75C. Add (B) to (A) and continue to homogenize. Stir-cool, with minimal aeration, to 40C, add fragrance, color and preservative. Adjust pH to 6.0 then fill.

Physical Properties:

Appearance: Milky white

Formulation F-732

Moisturizing Milk Creme

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Water	61.2
A	Potassium Hydroxide (45%)	0.2
A	Monafax MAP 160	0.5
A	Monalac MPL	5.0
A	Monaquat TG	5.0
B	Cetearyl Alcohol	5.1
B	Isopropyl Palmitate	3.0
B	Monalac ML	20.0

Procedure:

Separately combine ingredients of both phases in the order listed and heat to 75C. Add (B) to (A) and homogenize. Stir-cool, with minimal aeration, to 40C, add fragrance, color and preservative if required then adjust pH to 6.0-6.5 and fill.

Physical Properties:

Appearance: Milky white

Formulation F-731

SOURCE: Mona Industries, Inc.: Suggested Formulations

Moisturizing Milk Creme Variation

<u>Ingredients:</u>	<u>Wt%</u>
Part A:	
Monalac MPL	3.0
Monaquat SL-5	5.0
Water	60.2
Potassium Hydroxide (45%)	0.2
Part B:	
Monafax MAP 160	0.5
Monalac ML	20.0
Cetearyl Alcohol (Alfol 1618CG)	5.1
Isopropyl Palmitate	2.0
Monasil PCA	1.5
Part C:	
Fragrance	2.0
Germaben II	0.5
<u>Procedure:</u>	
1) Combine ingredients in both phases separately.	
2) Heat both separately to 75C.	
3) Add Part B to Part A and homogenize for at least 15 minutes.	
4) Stir cool, with minimal aeration to 45C.	
5) Add fragrance, color, and preservative (Part C).	
6) Adjust pH to 6.0-6.5, then fill.	
<u>Typical Properties:</u>	
Physical Appearance: Viscous Milky Lotion	
Viscosity: 9,000 cP	

Moisturizing Milk Creme

This high moisturizing formulation helps to minimize or alleviate dry skin conditions while leaving a smooth non-greasy after-feel.

<u>Ingredient:</u>	<u>Wt%</u>
Part A:	
Monalac MPL	5.0
Monaquat TG	5.0
Water	61.2
Potassium Hydroxide (45%)	0.2
Part B:	
Monafax MAP 160	0.5
Monalac ML	20.0
Cetearyl Alcohol	5.1
Isopropyl Palmitate	3.0

Combine ingredients in both phases separately and heat to 75C. Add (B) to (A) and continue to homogenize. Stir-cool, with minimal aeration, to 40C, add fragrance, color and preservative. Adjust pH to 6.0 then fill.

SOURCE: Mona Industries, Inc.: Suggested Formulations

Moisturizing Skin Cream

An elegant and rich moisturizing cream based on the NMF (Natural Moisturizing Factor) concept of ProdeW 100.

<u>Ingredient:</u>	<u>Wt. %*</u>
A: Deionized Water	59.60
Veegum HV, Magnesium Aluminum Silicate	1.00
Triethanolamine, 99%	2.40
Rhodigel, Xanthan Gum	0.20
B: Squalane (Fitoderm)	6.00
Cetyl Palmitate	4.00
Dioctyl Maleate	8.00
Propylene Glycol Isostearate	4.00
Pentaerythrityl Tetrapelargonate	4.00
Dimethicone (100 cs.)	0.80
Hydrogenated Soy Glyceride	1.00
Stearyl Alcohol	1.00
Stearic Acid	5.00
C: Sorbitol (and) Sodium Lactate (and) Proline (and)	
Sodium PCA (and) Hydrolyzed Collagen (ProdeW 100)	3.00
Preservative	q.s.

Procedure:

Weigh the Part A water into a suitable vessel and mix with a homogenizer at 5000 rpm. Weigh and dry blend the Veegum HV and Rhodigel, add them slowly to the water and continue mixing for 20 minutes. Begin heating to 65C. Add the remaining Part A ingredients and continue mixing at 5000 rpm. Weigh the Part B ingredients into another vessel. Mix and heat to 70C. Add Part B to Part A and mix for 10 minutes at 5000 rpm. Move the batch to a propeller mixer and adjust the speed to produce a small vortex. Cool while mixing to 35C and add the Part C ingredients in order, mixing each for 5 minutes. Continue cooling and package at 25-30C.

*As received basis

SOURCE: R.T. Vanderbilt Co., Inc.: Formulation from Centerchem, Inc.

Multi-functional Day Cream**Formulating Design and Advantages:**

This Bee's Milk formulation creates a barrier that effectively replenishes moisture, softens and imparts radiance. This will combat dry skin caused by variations in humidity and will help to minimize the signs of aging.

Raw Materials:

	<u>Wt%</u>
Water Phase I:	
Bermocol E 48i	0.4
Glycerine	2.7
Water (Distilled)	52.1
Triethanolamine	0.2
Oil Phase:	
Nikkol Lecinol S-10-M	2.1
Squalane	7.9
Macadamia Nut Oil	4.3
Borage Oil	2.9
Vitamin E	0.3
Vitamin A Palmitate	0.3
Kester Wax-62	1.0
Glycerol Monostearate	0.2
Ozokerite 158/160	0.3
Hexanediol Behenyl Beeswax	0.3
Phytoglycolipid	4.0
Liquapar	1.0
Water Phase II:	
Bee's Milk	20.0

Procedure:

Mix and heat Water Phase I components to 75C. Add all the oil phase components, heat till 75C and mix. Add slowly the Water Phase I to the Oil Phase under agitation (approx. 700 rpm) maintaining mixing a temperature of 75C for 5 minutes (make sure that mixing does not exceed 800 rpm's, as a phase inversion will occur). Allow to cool to 50-55C, add Water Phase II at room temperature, under moderate agitation (approx. 200 rpm's), continue mixing for 5 minutes and pour into container.

Adaptation of Formula and Its Influence on the Product:

Sunscreens are easily incorporated to give this product an SPF of 6-8 by using Escalol 507 at approximately 5% and reducing the concentration of water and/or oils.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Night Cream

<u>Ingredients:</u>	<u>Wt%</u>
Polysynlane	15.0
Paraffin Wax	2.0
Lanolin Oil	4.0
Hydrogenated Lanolin	6.0
Beeswax	3.0
Stearic Acid	1.5
Glyceryl Monostearate	2.5
I.P.M.	6.0
PEG-200 Mono Stearate	2.0
Potassium Hydroxide	0.2
Preservatives & Perfume	q.s.
Water	ad. 100.0

Enriched Night Cream (W/O)

<u>Ingredients:</u>	<u>Wt%</u>
AL Lanolate	0.6
Lanolin Alcohol	2.5
Mineral Oil	7.5
Paraffin Wax	2.5
Polysynlane	12.0
I.P.M.	6.0
Olive Oil	1.0
Dehymuls E	2.5
Propylene Glycol	6.0
Perfume & Preservatives	q.s.
Water	ad. 100.0

Liquid Night Cream

<u>Ingredients:</u>	<u>Wt%</u>
Polysynlane	15.0
Glyceryl Mono-Stearate	1.5
Lantrol	3.5
Stearic Acid	2.5
Cetanol	0.5
Tegin P	2.5
PEG-200 Mono Stearate	1.0
Solulan C-24	0.7
Triethanolamine	0.3
Veegum R	0.5
Perfume & Preservatives	q.s.
Water	ad. 100.0

SOURCE: Polyester Corp.: Suggested Formulations

Night Cream

<u>No.</u>	<u>Phase:</u>	<u>Ingredient:</u>	<u>Wt%</u>
1	A	Deionized water	43.45
2	A	Sodium borate	0.70
3	A	Glycerine	2.00
4	A	Xanthan gum	0.30
5	A	Tetrasodium EDTA	0.10
6	B	Cetearyl alcohol	2.00
7	B	Sorbitan sesquioleate	2.00
8	B	Glyceryl stearate	5.00
9	B	Oils of Aloha Macadamia Nut Oil	8.00
10	B	Vitamin E acetate	0.20
11	B	Beeswax	12.00
12	B	Mineral oil	15.00
13	B	Octyl palmitate	8.00
14	C	Preservative mixture	1.00
15	D	Fragrance	0.25

Manufacturing Procedure:

Phase A: Heat to 75C.

Phase B: Heat to 75C. Add to Phase A. Cool to 40C.

Phase C: Add to above cooled mixture.

Phase D: Add to above cooled mixture along with Phase C.
Homogenize.

This formula is meant to be left on the skin and to have a heavier film so that it lasts all night. This is a water-in-oil emulsion and the principal emulsifiers are Sorbitan sesquioleate and a combination of sodium borate and beeswax. This combination of oils gives proper weight and feel. Could be all Macadamia Nut Oil, but it might be expensive. This formulation can also be used as a make-up remover for lipstick and eye makeup.

Facial Cleansing Cream

<u>No.</u>	<u>Phase:</u>	<u>Ingredient:</u>	<u>Wt%</u>
1	A	Deionized water	54.00
2	A	Glycerine	6.00
3	B	Mineral oil	15.00
4	B	Oils of Aloha Macadamia Nut Oil	5.00
5	B	Oils of Aloha Kukui Nut Oil	5.00
6	B	Cetyl alcohol	2.00
7	B	C12-15 alcohols benzoate	2.00
8	B	Glyceryl stearate	10.00
9	B	Polysorbate 60	1.00
10	C	Preservative	QS

Manufacturing Procedure:

Phase A: Heat water and glycerine phase to 75C.

Phase B: Heat oil phase to 75C. Add to water phase. Cool to 40C.

Phase C: Add preservative.

SOURCE: Oils of Aloha: Suggested Formulations

Night Cream W/O with Regeneration Effect

Component:		Wt%
I	Dehymuls PGPH/Polyglyceryl-2 Dipolyhydroxystearate	4.0
	Lameform TGI/Polyglyceryl-3 Diisostearate	2.0
	Bienenwachs 8100/Cera Alba	2.0
	Zincum N 29/Zinc Stearate	2.0
	Traubenkernel/Vitis Vinifera	1.0
	Myritol 312/Caprylic/Capric Triglycerides	3.0
	Cetiol SN/Cetearyl Isononanoate	8.0
	Cetiol OE/Dicaprylyl Ether	5.0
	Copherol 1250/Tocopheryl Acetate	3.0
	Vitamin A Palmitate	0.2
II	Water	63.3
	1,4-Butylene Glycol	5.0
	MgSO ₄ -7H ₂ O	1.0
III	Collapuron DAK/Desamidocollagen	0.5
	Preservative/Perfume	q.s.

Viscosity, Brookfield, mPas: 112,500

Preparation in the Laboratory:

1. Melt the components listed under I at 80-85°C and stir until a homogeneous mixture results. 2. Heat the components listed under II to 80-85°C and add to phase I with stirring/homogenizing. Stir for 5 minutes at this temperature. 3. Allow the emulsion to cool with stirring in such a way that it remains in continual motion. Avoid incorporation of air. Homogenize at 65-55°C by means of a suitable dispersion unit (e.g. Ultra Turrax) in order to improve stability and structure. Add the single components listed under III at 30°C. Allow to cool to 30°C.

Hint:

Duration and intensity of homogenization influence the viscosity.

SOURCE: Henkel KGaA: Formulation No. 96/030/3

Night Foundation Cream

This cream exhibits an elegant, highly emollient feel. It is suitable for a night cream, a foundation cream or an all-purpose body cream.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	U.S.P. White Mineral Oil	6.0
	Cetyl Alcohol	10.0
	Sodium C12-C15 Pareth-3 Sulfonate/Avanel S-30	2.0
B	Propylene Glycol	5.0
	Methyl Paraben	0.25
	Deionized Water	76.75
	Color & Perfume	As Desired

pH: About 6.8

Appearance: Non-pourable, viscous cream

Procedure:

Heat part A to 70C and part B to 75C. Add part A to part B with moderate to high agitation, including side-scraping motion. Mix for a few minutes, then cool rapidly to 30C. Emulsion will invert to give a viscous water-in-oil emulsion.

Formulation J-28

All Purpose Cream, Hand & Body Cream

This emulsion is similar to the J-28, but is less lipophilic (more hydrophilic). It leaves a smooth, non-sticky feel to the skin and is extremely mild.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	U.S.P. White Mineral Oil	6.0
	Cetyl Alcohol	10.0
	Sodium C12-C15 Pareth-15 Sulfonate/Avanel S-150 CGN	4.0
B	Propylene Glycol	5.0
	Methyl Paraben	0.25
	Deionized Water	74.75
	Color & Perfume	As Desired

pH: About 6.8

Appearance: Non-pourable, viscous cream

Procedure:

Heat part A to 70C, and part B to 75C. Add part A to part B with moderate to high agitation, including side-scraping motion. Mix for a few minutes, then cool rapidly to 30C. Emulsion will invert to give a viscous water-in-oil emulsion.

Formulation J-47

SOURCE: PPG Industries, Inc.: Suggested Formulations

Oil-in-Water Dimethicone Cream

<u>Ingredients:</u>		<u>Wt%</u>
A Silbione oil 70047/V350*		20.0
B Arlatone 2121		5.5
Glycerol		4.0
Preservative		q.s
Water		70.35
C Rhodopol SC*		0.15

Manufacture:

1. Mix the Arlatone 2121 in the heated water phase at 80C under moderate stirring until a homogeneous dispersion is formed.
2. Disperse the hydrocolloid in the heated aqueous phase at 75C with moderate stirring.
3. Add the heated oil phase to the aqueous phase under intensive stirring.
4. Homogenise the mixture intensively at 75C for one minute.
5. Cool to 35C whilst stirring moderately.
6. Add heat-sensitive ingredients while stirring moderately.

Comment:

During the cooling process (step 5), when Arlatone 2121 emulsion starts to build up in the lamellar crystalline structure and can reduce the final viscosity. The viscosity of the formulation is inversely proportional to the mixing energy that has been put into the emulsion during manufacture.

Comments:

Viscosity: 78,000 mPa s (Brookfield LVT, spindle E. 1.5 rpm)
Energy input is related to formulation viscosity.

*Keltrol (Xanthan Gum, INCI)-Kelco

SOURCE: ICI Surfactants: Formulation F41-5-9

Oil-in-Water Natural Cream

<u>Ingredients:</u>		<u>Wt%</u>
A Sunflower oil		20.0
Anti-oxidant		q.s.
B Arlatone 2121		5.5
Glycerol		4.0
Preservative		q.s.
Water		70.3
C Rhodopol SC*		0.15

Manufacture:

1. Mix the Arlatone 2121 in the heated water phase at 80C under moderate stirring until a homogeneous dispersion is formed.
2. Disperse the hydrocolloid in the heated aqueous phase at 75C with moderate stirring.
3. Add the heated oil phase to the aqueous phase under intensive stirring.
4. Homogenise the mixture intensively at 75C for one minute.
5. Cool to 35C whilst stirring moderately.
6. Add heat-sensitive ingredients whilst stirring moderately.

Comment:

During the cooling process (step 5), when Arlatone 2121 emulsion starts to build up in the lamellar crystalline structure, moderate stirring is recommended. Intensive stirring can break down the lamellar structure and can reduce the final viscosity. The viscosity of the formulation is inversely proportional to the mixing energy that has been put into the emulsion during manufacture.

SOURCE: ICI Surfactants: Formulation F41-5-10

Oil-in-Water Night Cream

<u>Ingredients:</u>	<u>Wt%</u>
A Paraffin oil perliquidum*	20.0
Arlamol HD	10.0
Arlamol M 812	5.0
Wheat germ oil*	3.0
Vitamin E acetate*	2.0
Arlacel 60	2.0
Anti-oxidant	q.s.
B Arlatone 2121	5.5
Glycerol	4.0
Preservatives	q.s.
Water	48.4
C Keltrol*	0.1
D Perfume	q.s.

Manufacture:

1. Mix the Arlatone 2121 in the heated water phase at 80C under moderate stirring until a homogeneous dispersion is formed.
2. Disperse the hydrocolloid in the heated aqueous phase at 75C with moderate stirring.
3. Add the heated oil phase to the aqueous phase under intensive stirring.
4. Homogenise the mixture intensively at 75C for one minute.
5. Cool to 35C whilst stirring moderately.
6. Add heat-sensitive ingredients whilst stirring moderately.

Comment:

During the cooling process (step 5), when Arlatone 2121 emulsion starts to build up in the lamellar crystalline structure, moderate stirring is recommended. Intensive stirring can break down the lamellar structure and can reduce the final viscosity. The viscosity of the formulation is inversely proportional to the mixing energy that has been put into the emulsion during manufacture.

- * Paraffin oil perliquidum (Mineral Oil, INCI)-Merck
- Wheat germ oil-Sinerga
- Vitamin E acetate (Tocopheryl Acetate, INCI)-Roche
- Keltrol (Xanthan Gum, INCI)-Kelco

Formulation F41-5-1

SOURCE: ICI Surfactants: Suggested Formulations

Oil-in-Water Volatile Silicone Cream

<u>Ingredients:</u>	<u>Wt%</u>
A Arlamol S7	20.0
B Arlatone 2121	5.5
Glycerol	4.0
Preservative	q.s.
Water	70.35
C Rhodopol SC*	0.15

Manufacture:

1. Mix the Arlatone 2121 in the heated water phase at 80C under moderate stirring until a homogeneous dispersion is formed.
2. Disperse the hydrocolloid in the heated aqueous phase at 75C with moderate stirring.
3. Add the heated oil phase to the aqueous phase under intensive stirring.
4. Homogenise the mixture intensively at 75C for one minute.
5. Cool to 35C whilst stirring moderately.
6. Add heat-sensitive ingredients whilst stirring moderately.

Comments:

During the cooling process (step 5), when Arlatone 2121 emulsion starts to build up in the lamellar crystalline structure, moderate stirring is recommended. Intensive stirring can break down the lamellar structure and can reduce the final viscosity. The viscosity of the formulation is inversely proportional to the mixing energy that has been put into the emulsion during manufacture.

Comments:

Viscosity: 37,440 mPa s (Brookfield LVT, spindle E, 1.5 rpm)
Energy input is related to final formulation viscosity.

*Rhodopol SC (Xanthan Gum, INCI)-Rhone Poulenc

SOURCE: ICI Surfactants: Formulation F41-5-7

Oil-in-Water Volatile Silicone Cream

<u>Ingredients:</u>		<u>Wt%</u>
A	Arlamol S7	40.0
B	Arlatone 2121	5.5
	Glycerol	4.0
	Preservative	q.s.
	Water	50.4
C	Keltrol*	0.1

Manufacture:

1. Mix the Arlatone 2121 in the heated water phase at 80C under moderate stirring until a homogeneous dispersion is formed.
2. Disperse the hydrocolloid in the heated aqueous phase at 75C with moderate stirring.
3. Add the heated oil phase to the aqueous phase under intensive stirring.
4. Homogenise the mixture intensively at 75C for one minute.
5. Cool to 35C whilst stirring moderately.
6. Add heat-sensitive ingredients whilst stirring moderately.

Comment:

During the cooling process (step 5), when Arlatone 2121 emulsion starts to build up in the lamellar crystalline structure, moderate stirring is recommended. Intensive stirring can break down the lamellar structure and can reduce the final viscosity. The viscosity of the formulation is inversely proportional to the mixing energy that has been put into the emulsion during manufacture.

Comments:

Viscosity: 62,400 mPa s (Brookfield LVT, spindle E, 1.5 rpm)
Energy input is related to final formulation viscosity.

*Keltrol (Xanthan Gum, INCI)-Kelco

SOURCE: ICI Surfactants: Suggested Formulations

Optimal Face Cream**Raw Materials:**

	<u>Wt%</u>
I. Emulgade SE (Glyceryl Stearate (and) Ceteareth-20 (and) Ceteareth-12 (and) Cetearyl Alcohol (and) Cetyl Palmitate)	4.0
Cutina MD (Glyceryl Stearate)	1.0
Lanette O (Cetearyl Alcohol)	1.0
Baysilon M 350 (Dimethicone)	0.5
Cetiol PGL (Hexyldecanol (and) Hexyldecyl Laurate)	7.0
Myritol 312 (Caprylic/Capric Triglycerides)	3.0
Cetiol OE (Dicaprylyl Ether)	4.0
Copherol 1250 (Tocopheryl Acetate)	0.5
II.D-Panthenol	1.0
Glycerin 86%	5.0
Water	71.5
III.Carbopol 980 (Carbomer)	0.2
Cetiol PGL (Hexyldecanol (and) Hexyldecyl Laurate)	1.0
IV. KOH, 20%	0.3
Perfume/Preservative	q.s.

Viscosity: 100,000

Preparation in the Laboratory:

Melt the components listed under I at 80-85C and stir until a homogeneous mixture results. Heat the components listed under II to 80-85C and add to phase I with stirring/homogenizing. Add phase III (Carbopol mixed with oil) into the hot emulsion and homogenise immediately by means of a suitable dispersion unit (Ultra Turrax). Allow the emulsion to cool with stirring in such a way that it remains in continual motion. Avoid the incorporation of air. Add the single components listed under IV at 40C. Allow to cool to 30C.

SOURCE: Henkel KGaA: Formulation no.: 96/036/2

Rejuvenating Skin (O/W) Cream

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Glyceryl Stearate, PEG-100 Stearate/Arlacel 165	10.00
Caprylic/Capric Triglyceride/Mirlyol 318	20.00
Cetyl alcohol/Crodacal C-70	3.00
Lanolin/Corona PNL Lanolin	3.00
PEG-8 (and) Tocopherol (and) Ascorbyl Palmitate (and) Ascorbic Acid (and) Citric Acid/Oxyxex K Liquid	0.05
Phase B:	
Sorbitol/Hystar CG	2.00
Glycerin	1.20
Methyl-4-hydroxybenzoate	0.15
Propyl-4-hydroxybenzoate	0.05
Water, demineralized	q.s. to 100.00
Phase C:	
Water, Lecithin, Dipalmitoyl Hydroxyproline, Phenoxyethanol, Tall Oil Sterol, Linoleic Acid, Tocopherol, Sodium Ascorbate, Methylparaben, Butyl- paraben, Ethylparaben, Propylparaben, Mannitol/ ASC III/Rona	4.00
Procedure:	
Heat Phase A to 75C, Phase B to 80C. Add Phase B slowly to Phase A while stirring. Homogenize and cool down while stirring. Add Phase C to 35C.	
Notes:	
Viscosity: 260,000 cps (Brookfield RVT, Sp. C, 5 rpm) at 24C	
SOURCE: Rona/EM Industries, Inc.: Formula 13-06/K	

Shower Cream**Concept Statement:**

A smooth, moisturizing, pearlescent shower cream with a unique silky skin feel from Polyquta 400, Promois Silk and Promois Milk.

Ingredients:

	Wt%
1. Distilled/Deionized Water	31.90
2. Polyquta 400 (Polyquaternium 10)	1.00
3. Propylene Glycol	5.00
4. Sodium Lauryl Sulfate	24.00
5. Ammonium Lauryl Sulfate	24.00
6. Ritataine (Cocamidopropyl Betaine)	6.40
7. Lauramide DEA	3.00
8. Rita EGMS (Glycol Stearate)	2.00
9. Promois Silk-1000 (Hydrolyzed Silk)	0.10
10. Promois Milk (Hydrolyzed Casein)	0.10
11. Citric Acid (50% Solution)	q.s.
12. Sodium Chloride (25% Solution)	2.00
13. Phenoxyethanol	0.50
14. Fragrance	q.s.
15. D&C Red No. 33	q.s.
16. FD&C Yellow No. 5	q.s.

Compounding Procedure:

Heat item 1 to 75C. Slowly add items 3 and 12 until dispersed very well. While mixing, add items 3-8. Adjust pH to 6.5 using item 11. Cool to 40C. Add items 9, 10, and 13-16.

Formulation Ref. No. 124-29B

Emollient Cream**Concept Statement:**

An elegant white, creamy emulsion incorporating Pationic SCL, with excellent feel and moisturizing benefits.

Ingredients:

	Wt%
1. Pationic SCL (Sodium Cocoyl Lactylate)	0.50
2. Rita Cetearyl Alcohol 50/50 (Cetearyl Alcohol)	1.60
3. Rita GMS (Glyceryl Stearate)	4.00
4. Rita IPP (Isopropyl Palmitate)	5.00
5. Capric/Caprylic Triglyceride	10.00
6. White Petrolatum	5.00
7. Glycerine	3.00
8. Acritamer 501E (Carbomer) (3% aq. soln.)	3.34
9. Distilled/Deionized Water	67.06
10. Phenonip	0.50

Compounding Procedure:

Combine items 1 to 6 and heat to 80C. Combine items 7 to 9 and heat to 80C. Adjust water phase to pH of 6.5. Add oil phase to water phase while mixing. Homogenize at 60-80C. Cool to 35C with slow agitation and add item 10.

Formulation Ref. No. 124-23

SOURCE: R.I.T.A. Corp.: Suggested Formulations

Shower Cream**Concept Statement:**

A smooth, moisturizing, pearlescent shower cream with a unique silky skin feel from Polyquta 400, Promois Silk and Promois Milk.

Ingredients:

	Wt%
1. Distilled/Deionized Water	33.90
2. Polyquta 400 (Polyquaternium 10)	1.00
3. Propylene Glycol	3.00
4. Sodium Lauryl Sulfate	24.00
5. Ammonium Lauryl Sulfate	24.00
6. Ritataine (Cocamidopropyl Betaine)	6.40
7. Lauramide DEA	3.00
8. Rita EGMS (Glycol Stearate)	2.00
9. Promois Silk-1000 (Hydrolyzed Silk)	0.10
10. Promois Milk (Hydrolyzed Casein)	0.10
11. Citric Acid (50% Solution)	q.s.
12. Sodium Chloride (25% Solution)	2.00
13. Phenoxyethanol	0.50
14. Fragrance	q.s.
15. D&C Red No. 33	q.s.
16. FD&C Yellow No. 5	q.s.

Compounding Procedure:

Heat item 1 to 75C. Slowly add items 3 and 12 until dispersed very well. While mixing, add items 3-8. Adjust pH to 6.5 using item 11. Cool to 40C. Add items 9, 10 and 13-16.

Formulation Ref. No. 124-29C

Emollient Skin Cream**Concept Statement:**

An elegant, smooth cream formulated with Pationic SBL, to provide natural moisture and softening.

Ingredients:

	Wt%
1. Pationic SBL (Sodium Behenoyl Lactylate)	1.50
2. Rita Cetearyl Alcohol 50/50 (Cetearyl Alcohol)	3.00
3. Rita GMS (Glyceryl Stearate)	2.60
4. Rita IPP (Isopropyl Palmitate)	5.00
5. Capric/Caprylic Triglyceride	10.00
6. White Petrolatum	5.00
7. Glycerine	3.00
8. Distilled/Deionized Water	67.40
10. Phenonip	0.50

Compounding Procedure:

Combine items 1 to 6 and heat to 80C. Combine items 7 and 8 and heat to 80C. Add oil phase to water phase while mixing. Homogenize at 60-80C. Cool to 35C with slow agitation and add item 9.

Formulation Ref. 124-24

SOURCE: R.I.T.A. Corp.: Suggested Formulations

Skin Cream

<u>Raw Materials:</u>	<u>Wt%</u>
A: Mineral oil	19.0
Cetyl alcohol	4.0
Propylene glycol stearate	1.0
Glyceryl stearate	3.0
PEG-10 stearate	2.0
PEG-40 stearate	1.0
Butylparaben	0.1
Amihope LL	3.0
B: Acylglutamate HS-11	0.3
Butylene glycol	5.0
Methylparaben	0.2
Water	balance

Procedure:

Dissolve (A) (disperse Amihope LL) & (B) at 80-85C.
Add (B) to (A) with stirring and cool to room temperature with homomixer stirring.

Note:

Amihope LL provides smooth and silky touch. Acylglutamate HS-11 is used as an emulsifier to stabilize the emulsions.
Formula SC-1306 L

Skin Cream

<u>Raw Materials:</u>	<u>Wt%</u>
A: Mineral oil #70	8.0
IPP	2.0
Stearyl alcohol	2.0
Cetyl alcohol	0.5
Glyceryl stearate	0.5
Ceteareth-20	1.0
Propylparaben	0.1
B: Methylparaben	0.1
Ajidew N-50	4.4
Carbomer 940 (1% solution)	10.0
Water	balance
C: Sodium hydroxide solution (10%)	10.5

Procedure:

Heat (A) at 75-80C to dissolve. Heat (B) at 80C. Stir (A) with high speed homomixer and add (B), then add (C) immediately. Stir all ingredients at 3000 rpm for 3 minutes. Cool to room temperature.

Formula No. 2L-116

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Skin Cream

<u>Raw Materials:</u>		<u>Wt%</u>
A: Eldew CL-301		5.0
Squalane		15.0
Hydrogenated coco-glycerides (Emalex STG-R)		4.0
Polyglyceryl-2 oleate		1.0
Polyglyceryl-2 stearate		4.0
B: Acylglutamate HS-11		0.4
Butylene glycol		5.0
Methyl paraben		0.2
Water		balance

Procedure:

Dissolve (A) & (B) at 80-85C. Add (B) to (A) with stirring and cool to room temperature with homomixer stirring.

Note:

Eldew CL-301 contributes to improve spreadability and moisturizing properties of a cream. It reduces stickiness and occlusiveness of emulsions. Acylglutamate HS-11 works as an emulsifier to stabilize the emulsion.

Formula No. MC-1

Skin Cream

<u>Raw Materials:</u>		<u>Wt%</u>
A: Mineral oil		19.0
Cetyl alcohol		4.0
Propylene glycol stearate		1.0
Glyceryl stearate		3.0
PEG-10 stearate		2.0
PEG-40 stearate		1.0
Butyl paraben		0.1
Amihope LL		3.0
B: Acylglutamate HS-11		0.3
Butylene glycol		5.0
Methyl paraben		0.2
Water		balance

Procedure:

Dissolve (A) (disperse Amihope LL) and (B) at 80-85C. Add (B) to (A) with stirring and cool to room temperature with homomixer stirring.

Note: Amihope LL provides smooth and silky touch. Acylglutamate is used as an emulsifier to stabilize the emulsions.

Formula SC-1306L

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Skin Cream

<u>Raw Materials:</u>		<u>Wt%</u>
A: Mineral oil		8.0
Isopropyl palmitate		2.0
Stearyl alcohol		2.0
Cetyl alcohol		0.5
Glyceryl monostearate		0.5
POE(20) Cetyl ether		1.0
Propyl paraben		0.1
B: Prodex 400		4.4
Carboxy vinyl polymer (0.5% aq.)		20.0
Water		balance
Methyl paraben		0.1
C: Sodium hydroxide (1% aq.)		4.0

Procedure:

Dissolve ingredients (A) with stirring at 75-80C. Dissolve ingredients (B) at 80C. Mix (A) with homomixer and add (B) to emulsify and add (C) immediately and mix with 3000 rpm stirring for 3 minutes.

After emulsifying, cool down to room temperature.

Formula 2LP-131

Emollient Cream

<u>Raw Materials:</u>		<u>Wt%</u>
A: Eldew CL-301		5.0
Squalane		15.0
Hydrogenated Coco-glycerides		4.0
Polyglyceryl-2 Oleate		1.0
Polyglyceryl-2 Stearate		4.0
B: Butylene Glycol		5.0
Methyl paraben		0.2
Acylglutamate HS-11		0.4
Water		65.4
Formula MC-1		

SOURCE: Ajinomoto U.S.A., Inc.; Suggested Formulations

Soft Cream

<u>Ingredients:</u>	<u>Wt%</u>
A. Arlamol ISML, isosorbide monolaurate	4.00
Stearyl alcohol	1.00
Arlamol E, POP (15) stearyl ether	1.00
Dimethicone, 250 cs.	0.50
Brij 700, POE (100) stearyl ether	2.25
Brij 72, POE (2) stearyl ether	2.25
B. Water	88.05
Carbomer 934	0.40
C. Sodium hydroxide (10% aqueous)	0.40
D. Preservative	0.10
E. Fragrance	0.05

Suggested Preparation:

Heat A to 70C and B to 72C. Add B to A slowly with moderate agitation. Add C. Add D below 50C. Add E at 35C and add water to compensate for loss due to evaporation.

Comments:

This cream has a low emollience. It is non-greasy and has a very pleasant afterfeel. It is relatively inexpensive since it contains nearly 90% water.

This formula is stable for at least three months at 5C, 40C and 50C and for at least six freeze-thaw cycles.

Emollient Skin Cream

<u>Ingredients:</u>	<u>Wt%</u>
A: Arlamol ISML Isosorbide Laurate	4.00
Stearyl alcohol	1.00
Arlamol E	1.00
Silicone oil, 350 cs.	0.50
Brij 700 Steareth-100	2.25
Brij 72 Steareth-2	2.25
B: Water	88.20
Carbomer 934	0.40
C: Sodium hydroxide solution, 10% aqueous	0.40
D: Preservative	q.s.
E: Fragrance	q.s.

Preparation:

Heat (A) to 70C. Heat (B) to 72C. Add (B) to (A) slowly with moderate agitation. Add (C). Add (D) below 50C. Add (E) at 35C and replace water lost by evaporation.

Formula SK-4

SOURCE: ICI Surfactants: Suggested Formulations

Soft Cream, Type W/O

<u>Raw Materials:</u>	<u>Wt%</u>
A: Dehymuls PGPH	7.00
Lameform TGI	3.00
Beeswax	5.00
Isopropyl myristate	10.00
Myritol 318	5.00
Cetiol 868	5.00
Phenonip	0.30
Oxyplex LM	0.10
B: Water, distilled	49.30
Phenonip	0.30
Karion F liquid	5.00
C: Glycoderm (P)	10.00

Manufacture:

A: Melt and bring to approx. 75C.

B: Bring to approx. 75C and add to A with stirring.
Continue stirring until cooled to approx. 30C.

C: Stir in.

Perfume, roll.

Cream, Type O/W

<u>Raw Materials:</u>	<u>Wt%</u>
A: Emulgade SE	3.00
Cetiol LC	5.00
Cetiol SB 45	2.00
Lanette 18	3.00
Phenonip	0.30
B: Water, distilled	71.60
Phenonip	0.30
Glycerin	3.00
Carbopol 954	0.30
C: KOH 10%	1.50
D: Glycoderm (P)	10.00

Manufacture:

A: Melt and bring to approx. 70C.

B: Bring to approx. 70C and add to A with stirring.
Continue stirring until cooled to approx. 50C.

C: Add.

Continue stirring until cooled to approx. 30C.

D: Stir in.

Perfume, homogenize.

SOURCE: Chemisches Laboratorium Dr. Kurt Richter GmbH: Suggested Formulations

Ultra-Moisturizing Skin Cream**Formula Profile:**

The synergistic mixture of Veegum Ultra and Carbopol will create a thick rich cream that will have the Carbomer feel without the tack. Veegum Ultra will improve stability and maintain viscosity of the product through its stability cycle. The emollients in the oil phase and humectants in the water phase will support lasting residual skin feel and moisturization.

Ingredients:

	Wt%
A: Water	81.1
Veegum Ultra (Magnesium Aluminum Silicate)	0.5
Carbomer (Carbopol 934)	0.5
B: Glycerin	3.0
Butylene Glycol	2.0
C: Cetyl Alcohol	1.0
Glyceryl Monostearate SE (Dermacare MS SE)	3.0
Caprylic/Capric Triglyceride (Neobee M-5)	5.0
C12-15 Octanoate (Finester EH-25)	1.0
Dimethicone (DC-200 fluid-350 cts)	1.0
Steareth-2 (Brij 72)	0.83
Steareth-21 (Brij 721)	0.83
D: Preservative	qs
E: Fragrance	qs
F: Triethanolamine	0.24
Citric Acid Adjust pH to 5.6+/-0.3	qs

Procedure:

Step 1: Dry blend Veegum Ultra and Carbopol 934 in Part A. (Dry blending reduces the clumping of Carbopol and allows for the simultaneous introduction of ingredients). Sift the powder into an established vortex in the water. Veegum Ultra will be completely hydrated within 15 minutes. Allow about 45 minutes for Carbomer hydration.

The addition of any other ingredients during the hydration process will interfere with the hydration of Veegum Ultra and will reduce or even eliminate the desired properties generated by the Magnesium Aluminum Silicate.

Step 2: Begin heating water phase in Step 1 to 70C-75C.

Step 3: Once hydration process is completed, add remaining water phase ingredients from Part B to Step 2.

Step 4: Blend oil phase ingredients in Part C and heat the oil phase to 70C-75C.

Step 5: When both phases are at 70C-75C, add oil phase in Step 4 to water phase Step 2.

Step 6: Cool to 45C. Add Part D-Preservative to Step 2.

Step 7: Add Part E-Fragrance to Step 2.

Step 8: Cool to 35C. Adjust pH to 5.6 with Part F.

Product Specifications:

Viscosity: Brookfield LVT: 425,000+/-25,000 cps after 24 hours.
pH: 5.3-5.9

This formula produces a stable emulsion that passes 3 month stability at RT, 5C, 38C, 50C and 3 cycle F/T.

SOURCE: R.T. Vanderbilt Co., Inc.: Formula No. 469

Ultra-Moisturizing Skin Cream**Formula Profile:**

The synergistic mixture of Veegum Ultra and Carbopol will create a thick, rich cream that will have the great Carbomer feel without the tack. Veegum Ultra will improve stability and maintain the viscosity of the product. The emollients in the oil phase and the humectants in the water phase will support lasting residual skin feel and moisturization.

Ingredients:

	Wt%
A: Water	81.44
Veegum Ultra (Magnesium Aluminum Silicate)	0.25
Carbomer (Carbopol 934)	0.25
B: Glycerin	3.0
Butylene Glycol	2.0
C: Cetyl Alcohol	1.0
Glyceryl Monostearate SE (Dermacare MS SE)	3.0
Caprylic/Capric Triglyceride (Neobee M-5)	5.0
C12-15 Octanoate (Finester EH-25)	1.0
Dimethicone (DC-200 fluid-350 cts)	1.2
Steareth-2 (Brij 72)	0.83
Steareth-21 (Brij 721)	0.83
D: Preservative	qs
E: Fragrance	qs
F: Triethanolamine	0.2
Citric Acid	Adjust pH to 5.6+/-0.3
	qs

Procedure:

Step 1: Dry blend Veegum Ultra and Carbopol in Part A. (Dry blending reduces the clumping of Carbopol and allows for the simultaneous introduction of ingredients). Sift the powder into an established vortex in the water. Veegum Ultra will be hydrated within 15 minutes. Allow about 45 minutes for the Carbopol slurry to hydrate completely.

The addition of any other ingredients during the hydration process will interfere with the hydration of Veegum Ultra and will reduce or even eliminate the desired properties generated by the Magnesium Aluminum Silicate.

Step 2: Begin heating water phase in Step 1 to 70-75C.

Step 3: Once the hydration process is completed, add remaining water phase ingredients from Part B to Step 2.

Step 4: Blend oil phase ingredients in Part C and heat the oil phase to 70-75C.

Step 5: When both phases are at 70-75C, add oil phase in Step 4 to water phase Step 2.

Step 6: Cool to 45C. Add Part D-Preservative to Step 2.

Step 7: Add Part E-Fragrance to Step 2.

Step 8: Cool to 35C. Adjust pH with Part F.

Product Specifications:

Viscosity: Brookfield LVT DVII, Spindle #TF @ 0.3 RPM: 300,000+-30,000 cps after 24 hours.

pH: 5.3-5.9

This formula produces a stable emulsion and passes 3 month stability testing at RT, 5C, 38C, 50C and 3 cycle F/T.

SOURCE: R.T. Vanderbilt Co., Inc.: Formula No 474

Ultra-Moisturizing Skin Cream**Formula Profile:**

The synergistic mixture of Veegum Ultra and Carbopol Ultrez 10 will create a thick rich cream that will have the great Carbomer feel without the tack. Veegum Ultra will improve stability and maintain the viscosity of the product. The emollients in the oil phase and the humectants in the water phase will support lasting residual skin feel and moisturization.

Ingredients:

	Wt%
A: Water	81.14
Veegum Ultra (Magnesium Aluminum Silicate)	0.5
Carbomer (Carbopol Ultrez 10)	0.5
B: Glycerin	3.0
Butylene Glycol	2.0
C: Cetyl Alcohol	1.0
Glyceryl Monostearate SE (Dermacare MS SE)	3.0
Caprylic/Capric Triglyceride (Neobee M-5)	5.0
C12-15 Octanoate (Finester EH-25)	1.0
Dimethicone (DC-200 fluid-350 cts)	1.0
Steareth-2 (Brij 72)	0.83
Steareth-21 (Brij 721)	0.83
D: Preservative	qs
E: Fragrance	qs
F: Triethanolamine	0.2
Citric Acid	Adjust pH to 5.6+/-0.3
	qs

Procedure:

Step 1: Dry blend Veegum Ultra and Carbopol Ultrez 10 in Part A. (Dry blending allows for the simultaneous introduction of ingredients, even though these raw materials do not have to be added simultaneously). Sift the powder into an established vortex in the water. The Veegum Ultra and Carbopol Ultrez 10 will be hydrated within 15 minutes.

The addition of any other ingredients during the hydration process will interfere with the hydration of Veegum Ultra and will reduce or even eliminate the desired properties generated by the Magnesium Aluminum Silicate.

Step 2: Begin heating water phase in Step 1 to 70C-75C.

Step 3: Once the hydration process is completed, add remaining water phase ingredients from Part B to Step 2.

Step 4: Blend oil phase ingredients in Part C and heat the oil phase to 70C-75C.

Step 5: When both phases are at 70C-75C, add oil phase in Step 4 to the water phase Step 2.

Step 6: Cool to 45C. Add Part D-Preservative to Step 2.

Step 7: Add Part E-Fragrance to Step 2.

Step 8: Cool to 35C. Adjust pH with Part F.

Product Specifications:

Viscosity: Brookfield LVT DVII, Spindle #TF @ 0.3 RPM: 300,000+-30,000 cps after 24 hours

pH: 5.3-5.9

This formula produces a stable emulsion and passes 3 month stability testing at RT, 5C, 38C, 50C and 3 cycle F/T

SOURCE: R.T. Vanderbilt Co., Inc.: Formula No. 475

Vanishing Cream

<u>Ingredients:</u>	<u>Wt%</u>
A. Arlamol ISML, isosorbide monolaurate	10.0
Stearyl alcohol	4.0
Dimethicone, 350 cs.	0.5
Arlamol E, polyoxypropylene (15) stearyl ether	3.0
Brij 700, polyoxyethylene (100) stearyl ether	2.0
Brij 72, polyoxyethylene (2) stearyl ether	3.0
B. Water	72.9
Sorbitol Solution USP	4.0
Carbomer 934	0.2
C. Sodium hydroxide (10% aqueous)	0.2
D. Preservative	0.1
E. Fragrance	0.1

Suggested Preparation:

Heat A to 70C and B to 72C. Add B to A with moderate agitation. Add C. Add D below 50C. Add E to 35C and add water to compensate for loss due to evaporation.

In this formula Arlamol ISML, isosorbide monolaurate is the primary emollient complemented by Arlamol E, POE (15) stearyl ether. Stearyl alcohol is the viscosity builder, and silicone oil eliminates "soaping." Brij 700, POE (100) stearyl ether and Brij 72, POE (2) stearyl ether were chosen because of their excellent emulsifier properties for Arlamol ISML, isosorbide monolaurate.

The above formula is stable at 5C, R.T., and 40C, for three months. It is also stable for at least six freeze-thaw cycles.

Emollient Cream

<u>Ingredients:</u>	<u>Wt%</u>
A: Arlamol E pop 15 stearyl ether	20.0
Arlasolve 200 Liquid (72% active) poe 20 isohexadecyl ether	1.1
Brij 72 poe 2 stearyl ether	7.2
Stearyl alcohol, USP	2.0
B: Carbomer 934	0.2
Water, deionized	69.3
C: NaOH (10% w/w aqueous)	0.2
D: Perfume and preservative	q.s.

Preparation:

Disperse the Carbomer 934 in the water. Heat (A) to 70C and (B) to 72C. Add (B) to (A) with good agitation. Add (C). Add (D) between 35-40C. Pour about 35C.

Formulation AE-16

SOURCE: ICI Surfactants: Suggested Formulations

Water-in-Oil Cream

<u>Ingredients:</u>	<u>Wt%</u>
A: Arlacel 582	2.5
Arlatone T	0.5
Arlamol HD	12.0
Magnesium stearate	0.5
Beeswax	1.5
Candelilla wax	0.5
Isopropyl myristate	6.0
Almond oil	3.0
Dimethicone 100 mPa s	0.5
Oxynex 2004*	0.05
Aerosil R972*	0.5
B: Atlas G-2330	1.25
Propylene glycol	1.25
Glycerol	1.5
MgSO ₄ -7H ₂ O	0.5
Preservatives	q.s.
Water	67.95
C: Perfume	q.s.

Manufacture:

1. Heat A and B separately to 80C.
2. Add B to A slowly whilst stirring intensively.
3. Homogenise for 1 minute.
4. Cool to 50C whilst stirring intensively.
5. Homogenise for 1 minute.
6. Cool to room temperature whilst stirring intensively.

Comments:

Note that the emulsion is made with an extremely small amount of emulsifier. To compensate for this, very intensive homogenisation is essential. The silica is added for rheological purposes and improves the skin-feel.

Viscosity: 300,000 mPa s (Brookfield LVT, spindle F, 1.5 rpm)

*Oxynex 2004 (Antioxidant preparation)-Merck
Aerosil R972 (Silica Dimethyl Silylate, INCI)-Degussa

SOURCE: ICI Surfactants: Formulation F44-12-2

W/O Basic Cream

<u>Raw Materials:</u>		<u>Wt%</u>
A) Miglyol 812 (Caprylic/Capric Triglyceride)		7.00
Imwitor 780K (Isostearyl Diglyceryl Succinate)		6.00
Imwitor 928 (Glyceryl Cocoate)		3.00
Vaseline, white (Petrolatum)		9.00
Elfacos ST 9 (PEG-45/Dodecyl Glycol Copolymer)		4.00
Elfacos C 26 (Hydroxyoctacosanyl/Hydroxystearate)		5.00
B) Preservative		q.s.
Water	up to	100.00
C) Fragrance		q.s.

Preparation:

(A) is heated up to 75 degrees C. (B) is brought to the same temperature and emulsified into (A). The cream is cooled while stirring, and at about 30 degrees C, the fragrance is added.
Formulation 1.2P

Skin Protective Cream with Silicone Fluid (With AHA-Ester)

<u>Raw Materials:</u>		<u>Wt%</u>
A) Imwitor 370 (Glyceryl Cocoate/Citrate/Lactate)		8.00
Miglyol 812 (Caprylic/Capric Triglyceride)		10.00
Phenyl Dimethicone		5.00
B) Keltrol F (Xanthan Gum)		0.30
Preservative		q.s.
Water	up to	100.00
C) Fragrance		q.s.

Preparation:

(A) is heated up to 75 degrees C. (B) is stirred together and heated up to the same temperature and emulsified into (A). At about 35 degrees C, (C) is added.
Formulation 1.1W

SOURCE: Creanova Inc.: Suggested Formulations

W/O Cream with Eldew

<u>Ingredients/Trade Name:</u>	<u>Wt%</u>
Part A:	
Di-(Cholesteryl, behenyl, octyldodecyl) N-Lauroyl-L-glutamic acid ester/Eldew CL-301	2.0
Cetearyl Octanoate	8.0
C12-15 Alkyl Benzoate	5.0
Phenoxyethanol	0.60
Tocopheryl Acetate	0.05

Part B:	
Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone	
Copolyol (and) Hexyl Laurate	5.00
Cetyl Dimethicone	2.00

Part C:	
Deionized Water	68.55
Sodium Chloride	0.80
Glycerin (99.5%)	5.00
Partially Deacetylated Chitin (1.0%)/Marine Dew PC-100	2.00

Part D:	
Methylparaben	0.20
Butylene Glycol	0.80

Procedure:

Pre-melt Part A at 50C. Add Part B to Part A. Pre-melt Part D by heating to 50C. Add to Part C. Slowly add Part C and D mixture to Parts A and B with high shear mixing.

Appearance: White, smooth, shiny lotion

pH: 6.00-6.50

Viscosity: 20,000 cps (RVT #6 @ 10rpm @ 25C)

Hand Cream

<u>Raw Materials:</u>	<u>Wt%</u>
(O) Liquid Paraffin (#70)	10.0
Cetyl Alcohol	5.0
Nikkol WCB	5.0
Isopropyl Myristate	5.0
Glyceryl Monostearate (Self Emulsifying Type)	2.9
Polyoxyethylene (20) Cetyl Ether	2.1
(W) Ajidew N-50	3.0
Water	67.0
Preservative	q.s.

Procedure:

1. Heat (O) and (W) to 80C. 2. Add (W) to (O) slowly with stirring. 3. Cool to 40C with stirring.

pH: 5.2

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

W/O Light Cream

<u>Ingredients:</u>	<u>Wt%</u>
A) Arlacel P-135, PEG-30 Dipolyhydroxystearate	4.0
Arlamol S7, Cyclomethicone (and) PPG-15 stearyl ether	6.0
Arlamol HD, Isohexadecane	12.0
Castor wax, Hydrogenated castor oil	2.0
B) Atlas G-2330, Sorbeth-30	4.0
MgSO ₄ -7H ₂ O, Magnesium sulfate	0.7
Water	71.3
Preservative	q.s.
C) Perfume	q.s.

Procedure:

Heat (A) and (B) to 75C. Slowly add (B) to (A) while stirring vigorously. Homogenize thoroughly for 1 minute. Allow to cool to <45C while stirring. Homogenize thoroughly for 1 minute. Allow to cool to 35C while stirring vigorously. Add perfume and allow to cool to room temperature.

Comments:

Viscosity: 44,000 mPa s
(Brookfield LVT/spindle E/rpm 6)

Formula CP 1194

W/O Light Moisturizing Cream
90% Internal Phase

<u>Ingredients:</u>	<u>Wt%</u>
A) Arlacel P-135, PEG-30 Dipolyhydroxystearate	1.0
Arlamol S7, Cyclomethicone (and) PPG-15 stearyl ether	3.0
Arlamol HD, Isohexadecane	6.0
B) Atlas G-2330, Sorbeth-30	4.5
MgSO ₄ -7H ₂ O, Magnesium sulfate	0.8
Water	84.7
Preservative	q.s.
C) Perfume	q.s.

Procedure:

Heat (A) and (B) to 75C to 85C. Slowly add (B) to (A) while stirring intensively. Homogenize thoroughly for 1 minute. Allow to cool to <35C while stirring. Add perfume.

Comments:

Viscosity: 111,540 (after 1 month) mPa s
(Brookfield LVT/spindle E/rpm 1.5)

Formula CP 1192

SOURCE: ICI Surfactants: Suggested Formulations

Section VI

Hair Care Products

Aerosol Fine Fragrance Mousse

This formula provides a quick breaking foam which elegantly delivers fragrance with a dry talc-like after feel due to the emolliency of Velsan P8-3 liquid. Cartaretin F-4 provides hair and skin substantivity while Sandoxylate SX-424 contributes fragrance solubilization and fast breaking foam.

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Sandoxylate SX-424	1.00
Fragrance	1.00
Phase B:	
Deionized Water	81.10
Velsan P8-3 liquid	5.00
SD-40-2 Alcohol	11.20
Phase C:	
Cartaretin F-4	0.50
Dimethicone Copolyol	0.20

Procedure:

Pre-mix Phase A. In a separate vessel, add ingredients of Phase B, mixing well after each addition. Add Phase A, mix and add Phase C. Adjust pH=7.0 with Citric Acid. Fill cans and charge with propellant.

Typical Ratio: Propellant A-46: 4.0%
Concentrate: 96.0

Appearance: Clear liquid

pH: 7-8

Ref.: CL11-31-1 & CMP-07

Men's Finishing Fragrance Mousse

This formula provides a quick-breaking foam which elegantly delivers fragrance and nice after feel due to the emolliency of Velsan P8-3 liquid. Cartaretin F-4 provides hair and skin substantivity while Sandoxylate SX-424 contributes fragrance solubilization and fast breaking foam.

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Sandoxylate SX-424	1.00
Fragrance	1.00
Phase B:	
Deionized Water	81.10
Velsan P8-3 liquid	5.00
SD-40-2 Alcohol	11.20
Phase C:	
Cartaretin F-4	0.50
Dimethicone Copolyol	0.20

Procedure:

Pre-mix Phase A. In a separate vessel, add ingredients of Phase B, mixing well after each addition. Add Phase A, mix and add Phase C. Adjust pH=7.0 with Citric acid. Fill cans and charge with propellant.

Typical Ratio: Propellant A-46: 4.0%
Concentrate: 96.0%

Appearance: Clear liquid

pH: 7-8

Ref: CL11-31-1 & CMP-08

SOURCE: Clariant Corp.: Suggested Formulations

Aerosol Fragrance Mousse

This formula provides a quick breaking foam which elegantly delivers fragrance and a nice after feel due to the emolliency of Velsan P8-3 liquid. Cartaretin F-4 provides hair and skin substantivity while Sandoxylate SX-424 contributes fragrance solubilization and fast breaking foam.

CL9-201:

Ingredients:Wt%

Phase A:

Sandoxylate SX-424

0.60

Fragrance

0.20

Phase B:

Deionized Water

85.00

Velsan P8-3 liquid

0.60

SD-40-2 Alcohol

11.20

Dimethicone Copolyol

0.20

Phase C:

Cartaretin F-4

2.20

Procedure:

Pre-mix Phase A. In a separate vessel, add ingredients of Phase B, mixing well after each addition. Add Phase A, mix and add Phase C. Adjust pH-7.0 with Citric acid. Fill cans and charge with propellant.

Typical Ratio: Propellant A-46: 4.0%

Concentrate 96.0%

CL9-267:

Ingredients:Wt%

Phase A:

Sandoxylate SX-424

0.60

Fragrance

0.20

Phase B:

Deionized Water

85.30

Velsan P8-3 liquid

2.50

SD-40-2 Alcohol

11.20

Dimethicone Copolyol

0.20

Procedure:

Pre-mix Phase A. In a separate vessel, add ingredients of Phase B, mixing well after each addition. Add Phase A, mix and add Phase C. Adjust pH-7.0 with Citric acid. Fill cans and charge with propellant.

Typical Ratio: Propellant A-46: 10.0%

Concentrate: 90.0%

SOURCE: Clariant Corp.: Ref. CMP-04/Ref. CL9-201, 267

Blow-Dry Styling Lotion

This clear, water white, pump spray provides excellent curl retention and body. Diaformer Z-SM produces a clear, flexible film on the hair. Sandoxylate SX-424 functions as a fragrance solubilizer and Sandopan LS-24 is an excellent hydrotrope.

<u>Ingredients:</u>	<u>Wt%</u>
Diaformer Z-SM (Methylacrylol Ethyl Betaine/Methacrylates Copolymer)	2.00
Deionized Water	80.00
Dow Corning 193 (Dimethicone Copolyol)	0.20
SD 40 Alcohol	17.00
Sandopan LS-24 gel (Sodium Laureth-13 Carboxylate)	0.20
Sandoxylate SX-424 (PPG-2 Isodeceth-12)	0.40
Fragrance and Preservative	qs

Procedure:

Add water to vessel. With mixing, add Dow Corning 193, SD 40 Alcohol, Diaformer Z-SM and Sandopan LS-24 in order. Mix well after each addition. Premix Sandoxylate SX-424 and fragrance. Add to batch with mixing. Add preservative with mixing.

Appearance: Clear, water white liquid
Formula CHF-10/REF: CL24-95

Water Based Pump Hair Spray

Diahold A-503 requires no neutralization in formulation and its high water compatibility allows formulation of low VOC hair sprays. This water based hair spray uses Diahold A-503 to provide a clear glossy film and a strong hold.

<u>Ingredients:</u>	<u>Wt%</u>
Diahold A-503 (AMP-Acrylates Copolymer)	7.00
Deionized Water	91.50
Dow Corning 190 (Dimethicone Copolyol)	0.30
Lauramide DEA	0.30
Glycerine	0.20
Propylene Glycol	0.40
Fragrance and Preservative	qs

Procedure:

Add water to vessel. With mixing, add Dow Corning 190, Lauramide DEA, Diahold A-503, Glycerine, and Propylene Glycol in order. Mix well after each addition. Add Fragrance and Preservative with mixing.

Properties:

pH: 6.5-7.0

Appearance: Clear, water white liquid
Formula CHF-11/REF: CL24-74

SOURCE: Clariant Corp.: Suggested Formulations

Clarifying and Volumizing Hair Mask**Formula Profile:**

This mask formulation is for all hair types and takes advantage of the absorbing and cleansing properties of Bentonite. The extra fine grind of Veegum F is a mechanical volumizing aid in hair masks. This formula contains glycerin that will improve residual feel and improve the shine of hair. The surfactant aids in the rinsability of the dried mask.

Ingredients:

	Wt%
A: Water	47.8
Veegum F (Magnesium Aluminum Silicate)	7.0
B: Glycerin	5.0
Vanclay (Kaolin)	30.0
Talc (Cosmetic Grade)	5.0
Vanseal NALS-30 (Sodium Lauroyl Sarcosinate)	5.0
C: Preservative	qs
D: Fragrance	qs
E: Triethanolamine	0.2
Citric Acid Adjust pH to 6.0+-0.5	qs

Procedure:

Step 1: Sift Veegum F into an established vortex in water. Veegum F will need approximately 60 minutes for hydration using a homogenizer or up to 180 minutes using a prop type mixer. Additional energy, such as an increase in mixing intensity or water temperature, will reduce hydration time.

The addition of any other ingredients during the hydration process will interfere with the hydration of Veegum F and will reduce or even eliminate the desired properties generated by the Magnesium Aluminum Silicate.

Step 2: Add remaining water phase ingredients listed in Part B.

Step 3: Add Part C-Preservative.

Step 4: Add Part D-Fragrance.

Step 5: Adjust pH to 6.0 with part E.

Product Specifications:

Viscosity: Brookfield LVT DVII Spindle #TF @ 0.3 RPM: 1,000,000+-
100,000 cps

pH: 5.5-6.5

This formula produces a stable emulsion that passes 3 month stability testing at RT, 5C, 38C, 50C and 3 cycle F/T

SOURCE: R.T. Vanderbilt Co., Inc.: Formula No. 473

Clear Conditioning Hair Fluid
(This is a moderate viscosity fluid)

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Dimethicone Copolyol (and) Cyclomethicone (Abil EM 97)	2.15
Cyclomethicone (Abil B 8839)	15.20
Phenyl Trimethicone (Abil AV-20)	2.15
Quaternium-80 (Abil Quat 3272)	1.10
Cyclomethicone (and) Dimethiconol (and) Dimethicone (Abil OSW 12)	5.40
Fragrance	Q.S.

Phase B:	
Water	27.50
Preservatives	Q.S.
Propylene Glycol	38.50
Hexylene Glycol	4.00
Glycerin	3.00
Sodium Chloride	1.00

Procedure:

1. Combine the ingredients of Phase A together. Determine the refractive index.
2. Dissolve the preservatives and Sodium Chloride into the water of Phase B.
3. Add the remaining ingredients to Phase B. Determine the refractive index.
4. Match the refractive index of Phase B to Phase A using water or propylene glycol, depending on the direction needed.
5. Add Phase B slowly to Phase A while homogenizing. (Avoid air entrapment).

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulation

Antidandruff Hair Tonic

<u>Ingredients:</u>	<u>Wt%</u>
A: Octopirox (Piroctone Olamine)	0.10
B: Ethyl alcohol	35.00
C: Fragrance	0.30
Emulsogen EL (PEG-36 Castor Oil)	0.60
D: Water	63.20
Genamin KSL (PEG-5 Stearyl Ammonium Lactate)	0.30
D-Panthenol	0.50
E: Citric acid----->pH 5.0-6.0	q.s.

Procedure:

1. Dissolve A in B.
2. Stir 1 into mixture C.
3. Stir mixture D into 2.
4. Finally adjust the pH with E.

SOURCE: Hoechst Aktiengesellschaft: Formula B III/3006

Clear Conditioning Hair Gel

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Dimethicone Copolyol (and) Cyclomethicone (Abil EM 97)	2.00
Cyclomethicone (Abil B 8839)	14.00
Phenyl Trimethicone (Abil AV-20)	2.20
Quaternium-80 (Abil Quat 3272)	0.80
Cyclomethicone (and) Dimethiconol (and) Dimethicone (Abil OSW 12)	5.00
Fragrance	Q.S.
Phase B:	
Water	28.20
Preservatives	Q.S.
Propylene Glycol	40.00
Hexylene Glycol	4.00
Glycerin	3.00
Sodium Chloride	0.80

Procedure:

1. Combine the ingredients of Phase A together. Determine the refractive index.
2. Dissolve the preservatives and Sodium Chloride into the water of Phase B.
3. Add the remaining ingredients to Phase B. Determine the refractive index.
4. Match the refractive index of Phase B to Phase A using water or propylene glycol, depending on the direction needed.
5. Add Phase B slowly to Phase A while homogenizing. (Avoid air entrapment).

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Cream Rinse

<u>Raw Materials:</u>	<u>Wt%</u>
A: Genamin EQ	2.00
Hostacerin T-3 (Ceteareth-3)	1.00
Cetyl alcohol	1.50
Jojoba oil	1.50
B: Water	93.20
Panthenol	0.50
Preservative	q.s.
C: Fragrance	0.30
Dyestuff solution	q.s.
D: Citric acid----->pH 4.0	q.s.

Procedure:

1. Melt A at 75C.
2. Stir 2 into 1.
3. Heat B to 75C.
4. Stir until cool.
5. At ca. 40C add the components of C to 4.
6. Finally adjust the pH with D.

SOURCE: Hoechst Aktiengesellschaft: Formula B II/1061

Clear Extra Conditioning Hair Gel

Ingredients:	Wt%
Phase A:	
Dimethicone Copolyol (and) Cyclomethicone (Abil EM 97)	2.00
Cyclomethicone (Abil B 8839)	17.00
Phenyl Trimethicone (Abil AV-20)	2.50
Quaternium-80 (Abil Quat 3272)	1.50
Cyclomethicone (and) Dimethiconol (and) Dimethicone (Abil OSW 12)	6.50
Isopropyl Palmitate (Tegosoft P)	0.50
Fragrance	Q.S.
Phase B:	
Water	31.00
Preservatives	Q.S.
Propylene Glycol	31.00
Hexylene Glycol	4.00
Glycerin	3.00
Sodium Chloride	1.00

Procedure:

1. Combine the ingredients of Phase A together. Determine the refractive index.
2. Dissolve the preservatives and Sodium Chloride into the water of Phase B.
3. Add the remaining ingredients to Phase B. Determine the refractive index.
4. Match the refractive index of Phase B to Phase A using water or propylene glycol, depending on the direction needed.
5. Add Phase B slowly to Phase A while homogenizing. (Avoid air entrapment).

SOURCE: Goldschmidt Chemical Co.: Suggested Formula

Cream Rinse

Raw Materials:	Wt%
A: Genamin STAC (Steartrimonium Chloride)	2.50
Hostacerin DGS (Polyglyceryl-2 PEG-4 Stearate)	2.00
Cetyl stearyl alcohol	3.20
Mineral oil, high viscosity	1.00
B: Water	91.00
Preservative	q.s.
C: Fragrance	0.30
Dyestuff solution	q.s.
D: Citric acid---->pH 4.0	q.s.
1. Melt A at ca. 75C.	
2. Heat B to ca. 75C.	
3. Stir 2 into 1.	
4. Stir until cool.	
5. At ca. 35C add the components of C to 4.	
6. Finally adjust the pH with D.	

SOURCE: Hoechst Aktiengesellschaft: Formula B II/1057

Clear Gel Activator/Conditioner

This is a clear rinsing curl activator used to bring out the natural curl of the hair. It also contains humectants, detackifiers and conditioners.

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Water	57.65
Carbomer 940	0.50
Triethanolamine	2.25
Phase B:	
Glycerin	32.20
Propylene Glycol	5.00
Dimethicone Copolyol (Abil B 88183)	1.00
Dimethicone Copolyol (Abil B 8851)	1.00
Quaternium-80 (Abil Quat 3272)	0.40
Phase C:	
Color, Fragrance, Preservative	Q.S.

Procedure:

Disperse the Carbomer into the water and mix until completely clear. Add the Triethanolamine and mix well. Mix Phase B and add slowly to Phase A while mixing. Add Phase C with mixing.

Ethnic Hair Care
Extra Conditioning Conditioner

<u>Ingredients:</u>	<u>Wt%</u>
Cyclomethicone (and) Dimethiconol (and) Dimethicone (Abil OSW 12)	50.0
Cyclomethicone	30.5
Isohexadecane or Mineral Oil	8.0
Octyl Palmitate (Tegosoft OP)	3.0
Octyl Stearate (Tegosoft OS)	3.0
Phenyl Trimethicone (Abil AV 20)	5.0
Quaternium-80 (Abil Quat 3474)	0.5

Procedure:

Combine all ingredients in order with mixing.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Clear Silicone Hair Gel

<u>Ingredients:</u>	<u>Wt%</u>
Oil Phase:	
Cetyl Dimethicone Copolyol (Abil EM-90)	1.60
Cyclomethicone	7.20
Isopropyl Myristate (Tegosoft M)	3.60
Cetyl Dimethicone (Abil Wax 9801)	1.80
Dimethicone (50 cs)	1.80
Water Phase:	
Water	39.00
Propylene Glycol	42.50
Sodium Chloride	2.50
Preservatives	Q.S.

Procedure:

1. Mix the ingredients of the oil phase and the water phase separately at room temperature.
2. Measure the refractive indices of each phase. These must be identical to achieve optimum clarity. If necessary, adjust the refractive index of the water phase with additional propylene glycol.
3. Add the water phase to the oil phase slowly with strong shear. Mix until water phase is fully dispersed.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulation

Cream Rinse

<u>Raw Materials:</u>	<u>Wt%</u>
A:	
Genamin KSL (PEG-5 Stearyl Ammonium Lactate)	6.00
Hostaphat KL 340 N (Trilaureth-4 Phosphate)	1.50
Cetylstearyl alcohol	3.80
Mineral oil, high viscosity	2.00
B:	
Water	86.40
Preservative	q.s.
C:	
Fragrance	0.30
Dyestuff solution	q.s.
D:	
Citric acid-----> pH 4.0	q.s.

Procedure:

1. Melt A at ca. 75C.
2. Heat B to ca. 75C.
3. Stir 2 into 1.
4. Stir until cool.
5. At ca. 35C add the components of C to 4.
6. Finally adjust the pH with D.

SOURCE: Hoechst Aktiengesellschaft: Formula B II/1049

Creme Rinse

<u>Ingredients:</u>	<u>Wt%</u>
Water	86.80
Hydroxyethyl Cellulose	0.70
Glycol Distearate	2.00
Cetyl Alcohol	2.50
Monaquat TG	6.70
Phospholipid EFA	0.30
Monasil PDM	0.96
Oleic Acid	0.04

Procedure:

Charge water, carefully add Natrosol 250 HHR with good agitation. Heat to 50-60C and add remaining ingredients and continue heating to 70C. Cool to 45C and adjust pH to 4.5-5.0 with 50% citric acid. Add color, fragrance and preservatives as required. Continue agitation and cooling until pearl develops.

Formulation Properties:

Physical Appearance: White pearled lotion
Formulation F-703

Clear Gel Hair Conditioning Rinse

<u>Ingredients:</u>	<u>Wt%</u>
Water	87.90
Monafax MAP-230	4.10
Monateric LMAB	7.15
Monaquat ISIES	0.85

Procedure:

Blend in order listed at room temperature, adjust to pH 7, add fragrance, color, preservative, and package.

Appearance: Clear viscous liquid

Formulation F-680

Hair Conditioner

<u>Ingredients:</u>	<u>Wt%</u>
0.5% Hydroxyethylcellulose in water	93.0
Cetyl Alcohol	3.0
Monasil PLN	4.0

Viscosity: 2000 cps

Opaque Viscous Liquid

Procedure:

Hydrate HEC in water, then add remaining ingredients in order with sufficient heat to melt cetyl alcohol. Add fragrance, preservative, and then package.

Formulation F-684

SOURCE: Mona Industries, Inc.: Suggested Formulations

Creme Rinse

<u>Ingredients:</u>	<u>Wt%</u>
Water	86.80
Hydroxyethyl Cellulose	0.70
Glycol Distearate	2.00
Cetyl Alcohol	2.50
Monaquat SL-5	6.70
Phospholipid EFA	0.30
Monasil PDM	0.96
Oleic Acid	0.04

Procedure:

Charge water, carefully add Natrosol 250 HHR with good agitation. Heat to 50-60C and add remaining ingredients and continue heating to 70C. Cool to 45C and adjust pH to 4.5-5.0 with 50% citric acid. Add color, fragrance and preservative as required. Continue agitation and cooling until pearl develops.

Physical Appearance: White pearled lotion

Formulation F-708

Hair Relaxer

<u>Ingredients:</u>	<u>Wt%</u>
Part A:	
Phospholipid SV	3.0
Propylene Glycol	3.0
45% KOH	5.0
Water	50.0
Part B:	
Cetyl Alcohol	4.0
Monafax MAP 160	3.0
Petrolatum	20.0
Mineral Oil	10.0
Monasil PCA	2.0

Procedure:

Heat A & B separately to 65C. Slowly add B to A with homogenization and continue blending for an appropriate time. Stir cool to 40-45C, add fragrance and package.

Typical Properties:

Viscosity: 400,000 cP

pH: 13

Formulation F-706

SOURCE: Mona Industries, Inc.: Suggested Formulations

Creme Rinse

<u>Ingredient:</u>	<u>Wt%</u>
Water	86.75
Hydroxyethyl Cellulose	0.70
Glycol Distearate	2.00
Cetyl Alcohol	2.50
Monaquat TG	6.70
Phospholipid EFA	0.30
Monasil PDM	1.00
Oleic Acid	0.05

Procedure:

Charge water, carefully add Natrosol 250 HHR with good agitation. Heat to 50-60C and add remaining ingredients and continue heating to 70C. Cool to 45C and adjust pH to 4.5-5.0 with 50% citric acid. Add color, fragrance and preservative as required. Continue agitation and cooling until pearl develops.

Formulation Properties:

Physical Appearance: Pearlescent pearled lotion

Monasil PCA Hair Relaxer

<u>Ingredients:</u>	<u>Wt%</u>
Part A:	
Phospholipid SV	3.0
Propylene Glycol	3.0
45% KOH	5.0
Water	50.0
Part B:	
Cetyl Alcohol	4.0
Monafax MAP 160	3.0
Petrolatum	20.0
Mineral Oil	10.0
Monasil PCA	2.0

Procedure:

Heat A & B separately to 65C. Slowly add B to A with homogenization and continue blending for an appropriate time. Stir cool to 40-45C, add fragrance and package.

Typical Properties:

Viscosity: 400,000 cP/pH: 13

SOURCE: Mona Industries, Inc.: Suggested Formulations

Ethnic Hair Care
Amphoteric Shampoos
 (Cold Process)
 Clear

<u>Ingredients:</u>	<u>Wt%</u>
Tetrasodium EDTA	0.1
Water	51.1
Sodium Lauryl Sulfate	20.0
PEG-18 Glyceryl Oleate/Cocoate (Antil 171)	2.0
Dimethicone Propyl PG Betaine (Abil B 9950)	0.5
Quaternium-80 (Abil Quat 3272)	0.3
Dimethicone Copolyol (Abil B 88183)	0.5
PEG-30 Glyceryl Laurate (Tagat L)	0.5
Cocamidopropyl Betaine (Tego Betaine F)	25.0
Citric Acid (25% Solution)	to pH 6
Fragrance	Q.S.
Sodium Chloride (25% Solution to adjust viscosity)	Q.S.

Procedure:

1. Mix ingredients in order.
2. Adjust viscosity with Sodium Chloride.

Pearled

<u>Ingredients:</u>	<u>Wt%</u>
Tetrasodium EDTA	0.1
Water	48.1
Sodium Lauryl Sulfate	20.0
PEG-18 Glyceryl Oleate/Cocoate (Antil 171)	2.0
Dimethicone Propyl PG Betaine (Abil B 9950)	0.5
Quaternium-80 (Abil Quat 3272)	0.3
Dimethicone Copolyol (Abil B 88183)	0.5
PEG-30 Glyceryl Laurate (Tagat L)	0.5
Cocamidopropyl Betaine (Tego Betaine F)	25.0
Citric Acid (25% Solution)	to pH 6
Fragrance	Q.S.
Glycol Distearate (and) Steareth-4 (Tego Pearl N 100)	3.0
Sodium Chloride (25% Solution to adjust viscosity)	Q.S.

Procedure:

1. Mix ingredients in order.
2. Adjust viscosity with Sodium Chloride.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Ethnic Hair Glosser/Extra Conditioning

This water-in-oil formula based on a silicone polymeric emulsifier is designed for use as a leave in conditioner to give gloss and body especially for hair which has been chemically treated.

<u>Ingredients:</u>	<u>Wt%</u>
Phase A: Oil Phase:	
Cetyl Dimethicone Copolyol (Abil EM-90)	2.0
Petrolatum	6.0
Mineral Oil	10.0
Cetyl Dimethicone (Abil Wax 9801)	2.0
Octyl Palmitate (Tegosoft OP)	3.5
Isopropyl Palmitate (Tegosoft P)	3.0
Lanolin Oil	3.0
Phenyl Trimethicone (Abil AV 20)	2.0
Quaternium-80 (Abil Quat 3474)	0.5
Phase B:	
Fragrance	Q.S.
Phase C: Water Phase:	
Water	64.3
Sodium Chloride	0.7
Glycerin	3.0
Preservatives	Q.S.

Procedure:

1. Blend the components of Phase A together--heating to 50C. Mix until fully dispersed.
2. Cool to 40-45C with agitation - add fragrance.
3. In a separate vessel, mix the components to Phase C together.
4. Add Phase C to Phase A/B slowly with slow lightning mix. Mix until all water is incorporated into the oil phase.
5. Homogenize.

Ethnic Pump Spray Conditioner

<u>Ingredients:</u>	<u>Wt%</u>
Water	82.2
Propylene Glycol	7.5
Glycerin	7.5
Dimethicone Copolyol (Abil B 88183)	2.0
Quaternium-80 (Abil Quat 3272)	0.5
Panthenol	0.2
Tocopherol Acetate (Vitamin E)	0.1
Preservatives	Q.S.

Procedure:

Combine all ingredients in order with mixing.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Hair Brushing Lotion

<u>Raw Materials:</u>		<u>Wt%</u>
A:	Amihope LL	0.5
	POE (20) sorbitan monolaurate	1.5
	Pyroter GPI-25	1.0
	Propylene glycol	2.0
B:	Stearyl alcohol	0.5
	Carbopol 941 (0.5 wt% solution)	15.0
	Water	balance
	Preservatives	0.2
C:	ProdeW 100 or 200	0.2
	Ethanol	5.0

Procedure:

Mix (A) ingredients and add (B) to (A). Heat up to 70-80C with stirring. Cool down the mixture to 50C and add (C), then cool down to room temperature.

NOTE: Non-cationic antistatic formulation. Smooth combing obtained due to the lubricity of Amihope LL.

Formula BR-02

Hair Lotion

<u>Raw Materials:</u>		<u>Wt%</u>
A:	Glycereth-25 PCA Isostearate (Pyroter GPI-25)	1.2
	PEG-40 Hydrogenated castor oil PCA Isostearate (Pyroter CPI-40)	3.5
	Octyldodecanol	0.1
B:	ProdeW 400	1.5
	1,3-Butylene glycol	5.0
	Methyl paraben	q.s.
	Water	balance
C:	Ethanol	10.6
	Carboxymethyl cellulose	0.6
	Perfume	q.s.

Procedure:

Mix all ingredients (A) and (B) at 60-70C with stirring respectively. Add (B) to (A) with stirring. Add Carboxymethyl cellulose and cool to 40C. Add ethanol and perfume and cool with stirring to 30C.

Formula HLP-141

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Hair Conditioner Lotion

This lotion is typical of a modern rinse-off formula but has excellent freeze-thaw stability.

<u>Ingredients:</u>	<u>Wt%</u>
A Brij 721	1.3
Cetyl alcohol	0.9
Stearyl alcohol	0.6
Stearalkonium chloride	0.5
B Water, deionized	96.7

Preparation:

Heat (A) to 70C and (B) to 72C. Add (B) to (A) with moderate agitation. Cool while agitating to 40C. Replace water lost by evaporation and package.

Formula HC-10

Hair Conditioner Gel

Demonstrates the use of Forestall in a surfactant gel which would be a good hair dressing. The formula is a clear (micro-emulsion), "ringing" gel.

<u>Ingredients:</u>	<u>Wt%</u>
A Mineral oil	11.0
Arlasolve 200L Isoceteth-20	27.8
Brij 93 Oleth-2	6.0
B Water	41.8
Propylene glycol	5.0
Sorbitol Solution, USP	7.0
Forestall	1.4

Preparation:

Heat (A) and (B) to 90C. Add (B) to (A) with gentle stirring. Cool to 80C and add make-up water. Stir until uniform and pour while still fluid.

Formula HC-11

SOURCE: ICI Surfactants; Suggested Formulations

Hair Dressing
W/O Cold Process

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Cetyl Dimethicone Copolyol (Abil EM-90)	2.0
Mineral Oil	7.3
Caprylic/Capric Triglycerides (Tegosoft CT)	3.0
Cetyl Dimethicone (Abil Wax 9801)	1.0
Cyclomethicone	5.0
Polyglyceryl-4 Isostearate (Isolan GI 34)	1.0
Cetearyl Isononanoate (Tegosoft CI)	1.5
Cetyl Octanoate (Tegosoft CO)	0.8
Quaternium-80 (Abil Quat 3272)	0.5
Fragrance	Q.S.
Phase B:	
Water	72.9
Propylene Glycol	3.0
Glycerin	1.2
Sodium Chloride	0.8
Preservatives	Q.S.
<u>Procedure:</u>	
1. Mix the ingredients of Phase A together.	
2. Dissolve the Sodium Chloride into the water. Add the Glycerin and Propylene Glycol. Mix until clear.	
3. Add the preservatives.	
4. Add Phase B to Phase A slowly with soft propeller mixing. Maintain, at all times, a creamy appearance.	
5. Homogenize.	

Ethnic Hair Care
Leave-In Moisturizing/Sheen

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Tetrasodium EDTA	0.1
Water	77.9
Oleth-20	2.0
Dimethicone Copolyol (Abil B 88183)	3.0
Quaternium-80 (Abil Quat 3272)	0.5
Glycerin	15.0
Phase B:	
PEG-30 Glyceryl Laurate (Tagat L)	1.5
Fragrance	Q.S.
Preservative	Q.S.
<u>Procedure:</u>	
1. Add the water, Oleth-20, heat to 40C. Mix until clear.	
2. Add the remaining ingredients of Phase A mixing each until clear.	
3. Add the fragrance to the Tagat L. Mix well - add to Phase A.	
4. Cool with mixing - add preservatives.	

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Hair Relaxers

These formulations for a hair relaxer give a stable composition with a very desirable consistency. They can be easily worked through the hair and will remain until reacted. The products are extremely mild with minimal skin irritation.

Hair Relaxer D-51

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Petrolatum (USP)	23.0
	Mineral Oil	14.0
	Cetearyl Alcohol	5.5
B	Tetrasodium EDTA, 40%	0.1
	Propylene Glycol	5.5
	Sodium C12-C15 Pareth-15 Sulfonate/	
	Avanel S-150 CGN	3.65
	PEG 60 Lanolin	0.25
	Sodium Hydroxide, 50%	4.1
	Hydrolyzed Animal Protein/Lexcin QX 300	0.25
	Perfume	0.1
	Deionized Water	43.55

Hair Relaxer D-52

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Petrolatum (USP)	23.0
	Mineral Oil	14.0
	Cetearyl Alcohol	5.5
B	Tetrasodium EDTA, 40%	0.05
	Propylene Glycol	5.5
	Sodium C12-C15 Pareth-3 Sulfonate/Avanel S-30	3.65
	PEG 60 Lanolin	0.25
	Sodium Hydroxide, 50%	4.1
	Hydrolyzed Animal Protein/Lexcin QX 300	0.25
	Perfume	0.1
	Deionized Water	43.55

Procedure:

Heat the petrolatum to 80C and add the mineral oil. Continue heating with slow agitation. When the petrolatum is completely melted, add the cetearyl alcohol. Maintain temperature at 80C and continue stirring. To the deionized water, add the tetrasodium EDTA, propylene glycol, Avanel S-150 CGN or S-30 and PEG 60 lanolin with mixing. Heat to 80C. With vigorous agitation, add Part A to Part B. Stir for 15 minutes. Cool to 40C. Add the sodium hydroxide, animal protein and perfume. (NOTE: At this stage, the formula is separated and resembles cottage cheese. This will be corrected as the batch is finished.) Mix the batch while cooling to a temperature of about 20C using an external ice bath. The sides of the vessel must be freed of product while mixing.

SOURCE: PPG Industries, Inc.; Formulations D-51 and D-52

Hair and Scalp Conditioner

This conditioner leaves the hair with a shine and softness, while providing the moisturization needed by both the hair and scalp.

<u>Sequence:</u>	<u>Raw Material/INCI Name:</u>	<u>Wt%</u>
1	Deionized Water	58.70
2	Keltrol/Xanthan Gum	0.15
2	Veegum/Magnesium Aluminum Silicate	0.15
3	Uniphen P-23	0.50
3	Lipamide MEAA (75%)/Acetamide MEA	1.00
3	Liponic EG-1/Glycereth-26	1.00
4	Ultrapure L/White Petrolatum USP	8.00
4	Avocado Oil	12.00
4	Lipo GMS 450/Glyceryl Stearate	1.50
4	Lipopeg 6000 DS/PEG-150 Distearate	1.00
4	Lipowax P/Emulsifying Wax, NF	0.50
4	Lipocol C/Cetyl Alcohol	0.50
4	Lipolan R/Lanolin Oil	5.00
4	Lipovol MOS-70*	10.00

*Patent #4,659,573

Procedure:

1. Mix Sequence #1 on overhead mixer while heating to 78C.
2. Dry mix Sequence #2 ingredients and add slowly to Sequence #1 at 78C with medium agitation. Mix until completely hydrated.
3. Add Sequence #3 to batch in order of addition, while holding temperature at 78C.
4. Mix Sequence #4 together while heating to 80C until completely melted and add to batch at medium speed. Cool to 60C.
5. At 60C, switch to sweep blade and mix at low speed. Cool to 25C.

Specifications:

pH: 6.33+-0.2

Viscosity: LVT-F @ 1.5 rpm=185,00 cps +-10%

SOURCE: Lipo Chemicals Inc.: Formulation No. 1016

Hair Styling Cream with Natural Oils & Conditioners

This styling cream contains natural oils to provide moisturization and shine. This light emulsion can be used to style and define hair without leaving a heavy greasy feel. This formula also contains cationic conditioners to provide excellent static control and feel, and a sunscreen to help protect the hair from UV damage.

Ingredient/Trade Name:Wt%

Part A:

1. Meadowfoam Seed Oil/EmCon Limnathes Alba	3.00
2. Apricot Kernel Oil/Super Refined Apricot Kernel Oil	3.00
3. Phenyl Trimethicone/Dow Corning 556 Fluid	2.00
4. C12-15 Alkyl Benzoate/Finsolv TN	2.00
5. Glyceryl Stearate/Cerasynt SD	2.00
6. Octyl Methoxycinnamate/Neo Heliopan AV	4.00
7. Tocopheryl Acetate/Radical Scavenger Vitamin E Acetate	0.50
8. Acrylates/C10-30 Alkyl Acrylates Crosspolymer/ Pemulen TR-1	0.25
9. Carbomer/Carbopol Ultrez 10	0.15

Part B:

10. Deionized Water	78.92
11. PVP (100%)/Luviskol K90 Powder	1.00
13. Triethanolamine (99%)	0.38

Part C:

14. PEG-20 Almond Glycerides/Crovol A-40	0.20
15. Linoleamidopropyl PG-Dimonium Chloride Phosphate/ Phospholipid EFA	0.30
16. Cocodimonium Hydroxylpropyl Hydrolyzed Wheat Protein/Hydrotritium QM	0.30
17. Fruity Floral Fragrance/Fragrance #A42017	1.00
18. Propylene Glycol (and) Methylparaben (and) Propyl- paraben (and) Diazolidinyl Urea/Germaben IIE	1.00

Properties:

Appearance: Thick, glossy, creamy emulsion

pH: 6.0-6.8

Viscosity (cP): 20,000-40,000

Preparation Procedure:

1. Part A: Combine all oil phase ingredients, heat mixture to 60-65C, mix until uniform. Disperse Pemulen TR-1 and Carbopol Ultrez 10 polymers in oil phase. Mix until powders are dispersed well.
2. Part B: Disperse PVP K-90 in deionized water (55-60C). Mix until polymer is hydrated. Add triethanolamine to solution.
3. Add Part A to Part B. Both phases should be at 55-60C. Mix until no lumps remain and batch is uniform, maintaining a temperature of 55-60C.
4. Part C: Add Crovol A-40 to batch. NOTE: Batch may invert to a water in oil emulsion (batch will look curdled). Keep mixing and cool batch to 40-45C. Keep mixing until batch reinverts to an oil-in-water emulsion (extra shear agitation may be necessary if the batch has still not reinverted at 40C)
5. Part C: After the batch has cooled to 40-45C and inversion is complete, add remaining Part C ingredients. Mix til uniform.

SOURCE: B.F. Goodrich Co.: Formulation P0048

Hair Styling Gel

Diaformer Z-301 provides excellent hold, clear films, and does not flake. This water white, clear formulation has good viscosity initially and over time. This formula can be easily removed from the hair by shampooing.

<u>Ingredients:</u>	<u>Wt%</u>
Deionized Water	95.75
Carbopol 941 (Carbomer 941)	0.40
Triethanolamine 99%	0.40
Diaformer Z-301 (Methacryloyl Ethyl Betaine/Methacrylates Copolymer)	3.35
Fragrance and Preservative	qs

Procedure:

Add Carbopol 941 to water and mix until a homogeneous viscous liquid develops. Add Triethanolamine to neutralize the Carbopol 941. Mix well. Add Diaformer Z-301 and other ingredients one at a time mixing well after each addition. Adjust pH as desired.

Properties:

Appearance: Water white, clear gel
 pH: 6.0
 Viscosity: 12,500-13,000 cps
 Formula CHF-16/REF: CL24-101

Hard Hold Hair Spray

This hard hold hair spray uses Diaformer Z-AT for its excellent curl retention and hold. Diaformer Z-AT also helps to reduce static and improve manageability when the hair is combed. This formulation also meets 80% VOC requirements by incorporating almost 13% water.

<u>Ingredients:</u>	<u>Wt%</u>
Diaformer Z-AT (Methacryloyl Ethyl Betaine/Methacrylates Copolymer)	17.50
Deionized Water	12.70
Dow Corning 190 (Dimethicone Copolyol)	0.10
SD 40 Alcohol	69.50
Lauramide DEA	0.10
Fragrance and Preservative	qs

Procedure:

Add Diaformer Z-AT to the alcohol mixing well. Add water with mixing. Add remaining ingredients one at a time with mixing.

Appearance: Clear, slightly yellow liquid
 Formula CHF-17/REF: CL27-35

SOURCE: Clariant Corp.: Suggested Formulations

Hair Styling Gel

Illustrates a hair styling gel based on a Carbomer resin and polyvinylpyrrolidone.

<u>Ingredients:</u>	<u>Wt%</u>
A Carbomer 940	0.33
Sorbitol Solution, USP	2.00
SDA-40 Ethanol, 25% aqueous	72.85
B Arlasolve 200 Liquid/Gel	0.40
Water/denatured alcohol, SDA Formula No. 40, 75/25	
Weight % mixture	23.07
Vinylpyrrolidone/vinyl acetate copolymer	1.00
Triethanolamine	0.35
Perfume	q.s.

Preparation:

Part (A): Mix Sorbitol Solution with water/alcohol blend. Disperse Carbomer 940 in the Sorbitol Solution water/alcohol blend using high speed propeller agitation. Allow the air bubbles to disperse.

Part (B): Add the Arlasolve 200 Liquid/Gel to the perfume with gentle agitation. Add the water/alcohol solution, PVP/VA, and triethanolamine in that order, stirring after each addition to insure solution. Add (B) to (A) with very slow agitation.

Caution! Ethanol is very flammable!

Formula HC-4

Neutralizing Lotion

A typical bromate neutralizing lotion is represented. Viscosity is controlled by blending surfactants.

<u>Ingredients:</u>	<u>Wt%</u>
A Sodium bromate	12.0
Brij 30 Laureth-4	4.5
Polyglycol palmitic amide	4.5
Water	79.0
Preservative	q.s.
B Acetic acid, glacial	q.s.

Preparation:

Add the sodium bromate to water. Stir with heat until dissolved. Add the remainder of (A). Heat to 70-75°C. Agitate continually until cooled to room temperature. Adjust pH to 6.5-7.0 with (B). Replace water lost by evaporation. Package. Formula HC-18

SOURCE: ICI Surfactants: Suggested Formulations

Hair Styling Mousse

Diaformer Z-SM provides hold as well as conditioning on the hair. Its natural looking hold is flexible and bouncy. Sandoxylate SX-424 acts as a fragrance solubilizer and Elfugin AKT 300 is a corrosion inhibitor.

<u>Ingredients:</u>	<u>Wt%</u>
Diaformer Z-SM (Methacryloyl ethyl betaine/Methacrylates Copolymer)	4.00
Deionized Water	78.05
Dow Corning 193 (Dimethicone Copolyol)	0.25
SD 40 Alcohol	17.00
Sandoxylate SX-424 (PPG-2 Isodeceth-12)	0.45
Fragrance	0.10
Elfugin AKT liq 300 (Sodium C13-15 Pareth-8 Butyl Phosphate and Sodium C13-15 Pareth-9 Phosphate)	0.10
Preservative	qs

Procedure:

Add water to vessel. With mixing, add Dow Corning 193, SD 40 Alcohol, and Diaformer Z-SM in order. Mix well after each addition. Premix Sandoxylate SX-424 and Fragrance and add to batch with mixing. Add Elfugin AKT and Preservative one at a time with mixing.

Aerosolize in the ratio of 95% concentrate to 5% A-70 propellant.

Notes:

Clariant has worked with Seaquist Valve to develop recommendations for valves. Their recommended valve system for CHF-09 is as follows:

Button: Long Skirt/Long Spout//Stem: 2x0.020", 0.333" stem length
Gasket: Buna-N 0.042"/Cup: Alum. CC, Ep.Top/Bottom, Cut gasket
Spring: 0.020" SS Body: Tailless

In addition, they also tested and found four specific gaskets to be compatible with this formulation. They are in the NS-20 series: Buna-P #100 and #102, Buna-P #150 and Butyl #501. CHF-09/Ref: CL24-95

Crystal Clear Hair Styling Gel

<u>Ingredients:</u>	<u>Wt%</u>
Deionized Water	96.78
Carbopol 1342 (Acrylates/C10-30 Alkyl Acrylate Cross-polymer)	0.61
Triethanolamine 99%	0.20
Diaformer Z-301 (Methacryloyl Ethyl Betaine/Methacrylates Copolymer)	1.60
Fragrance and Preservative	qs

Procedure:

Sprinkle Carbopol 1342 into rapidly agitating cold water. Mix well until thoroughly dispersed. With mixing, add Triethanolamine to neutralize the Carbopol 1342. Add Diaformer Z-301 and other ingredients one at a time with mixing. Adjust pH as desired.

Properties:

Appearance: Water white, clear gel

Viscosity: 36,000-40,000 cps

CHF-07/Ref: CL24-66

SOURCE: Clariant Corp.: Suggested Formulations

Hydrogen Peroxide Emulsions

Hydrogen peroxide emulsions are listed below, based on 6% hydrogen peroxide content. Other levels should be tolerated but should be carefully evaluated. Viscosity can be varied by adjusting the levels of fatty alcohols, fatty acid, and emulsifier.

Cream

<u>Ingredients:</u>		<u>Wt%</u>
A	Cetyl alcohol	6.0
	Brij 721 Steareth-21	5.0
	Silicone oil, 350 cs.	0.5
B	Water, deionized	66.3
C	Hydrogen peroxide, 27% dilution grade	22.2

Lotion

<u>Ingredients:</u>		<u>Wt%</u>
A	Cetyl alcohol	3.0
	Brij 721 Steareth-21	3.0
	Silicone oil, 350 cs.	0.5
B	Water, deionized	66.3
	Sorbitol Solution, USP	5.0
C	Hydrogen peroxide, 27% dilution grade	22.2

Preparation:

Heat (A) to 70C and (B) to 72C. Add (B) to (A) slowly with moderate agitation. Add (C) below 45C and stir to 35C. Replace water lost by evaporation and adjust pH to between 3.5-4.0 with dilute phosphoric acid (10% C.P.). Package in suitable container for possible evolution of oxygen.

Comments:

After four weeks at room temperature the above cream formula has a viscosity of about 17,600 cps. The emulsion stability is good for at least four weeks at 50C and for at least four freeze-thaw cycles.

After four weeks at room temperature the lotion formulation has a viscosity of 5,600 cps. The emulsion is physically stable at 50C for at least four weeks and four freeze-thaw cycles. After three months at room temperature the H2O2 content was almost 5%.

SOURCE: ICI Surfactants: Formula HC-13

Hydrogen Peroxide Lotion

The formula listed below departs in that a combination of stearic acid and fatty alcohols is used to achieve the desired consistency. Also phenacetin, a stabilizer, and N-hydroxyethyl-ethylenediaminetriacetic acid, a chelating agent, are included to promote stability of the hydrogen peroxide.

<u>Ingredients:</u>	<u>Wt%</u>
A Stearic acid, triple pressed	10.00
Stearyl alcohol	0.50
Cetyl alcohol	1.00
Brij 721	5.00
Silicone oil, 350 cs.	0.50
B Water	60.56
N-hydroxyethylethylenediamine-triacetic acid	0.20
Phenacetin	0.04
C Hydrogen peroxide, 27% dilution grade	22.20
D Phosphoric acid (10% C.P.)	9.50

Preparation:

Heat (A) to 70C and (B) to 72C. Add (B) to (A) slowly with moderate agitation. Add (C) below 45C and stir to 35C. Replace water lost by evaporation and adjust pH to between 3.5-4.0 with dilute phosphoric acid (10% C.P.). Package in suitable container for possible evolution of oxygen.

Comments:

After five weeks at room temperature the viscosity of the lotion was 10,200 cps. The emulsion was stable for at least five weeks at 50C and for at least four freeze-thaw cycles. After three months at room temperature the hydrogen peroxide content was 5%.

Formula HC-14

Styling/Conditioning Mousse

A prototype styling/conditioning mousse is shown. It includes Forestall as a conditioner, a silicone copolymer to improve wet combing and polymeric resin for setting.

<u>Ingredients:</u>	<u>Wt%</u>
A Forestall	1.4
Brij 721	0.5
Amodimethicone (and) Nonoxynol-10 (and) Tallow-trimonium chloride	0.1
Water	78.0
B Vinylcaprolactam/PVP/Dimethylaminoethyl methacrylate copolymer	5.0
Ethanol, SDA-40	10.0
C Hydrocarbon Propellant A-46	5.0

Preparation:

Heat (A) to 70C with stirring until uniform. Cool to 40C. Add (A) to (B) with stirring. Pack in suitable aerosol containers and pressurize with (C) at room temperature.

Caution: Ethanol is very flammable!

Formula HC-12

SOURCE: ICI Surfactants: Suggested Formulations

Medium Hold, 80% VOC Pump Hair Spray

Diaformer Z-A provides a medium hold in this clear, water white spray. It also reduces static and improves manageability when the hair is combed. Its clear, flexible film gives a natural looking hold while offering excellent curl retention.

<u>Ingredients:</u>	<u>Wt%</u>
Diaformer Z-A (Methacrylol Ethyl Betaine/Methacrylates Copolymer)	5.00
Dow Corning 190 (Dimethicone Copolyol)	0.20
Lauramide DEA	0.10
SD 40 Alcohol	75.00
Fragrance and Preservative	qs
Deionized Water	qs

Procedure:

Add Diaformer Z-A to the alcohol mixing well. Add water with mixing. Add remaining ingredients one at a time with mixing.

Appearance: Clear, water white liquid

Formula CHF-12/REF: CL24-76

Firm Hold, 80% VOC Pump Hair Spray

Diahold A-503 is easily formulated into a firm hold spray. This anionic polymer requires no in-process neutralization. Its good compatibility with water and superior curl retention produce a clear water white spray with excellent hold.

<u>Ingredients:</u>	<u>Wt%</u>
Diahold A-503 (AMP-Acrylates Copolymer)	7.00
Dow Corning 190 (Dimethicone Copolyol)	0.20
Lauramide DEA	0.10
SD 40 Alcohol	75.00
D-Panthenol	0.05
Fragrance and Preservative	qs
Deionized Water	qs

Procedure:

Add Diahold A-503 to the alcohol mixing well. Add water with mixing. Add remaining ingredients one at a time with mixing.

Appearance: Clear, water white liquid

Formula CHF-13/REF: CL24-74

SOURCE: Clariant Corp.: Suggested Formulations

Mild Fortified Hair Conditioner

This formulation provides a high degree of substantivity and conditioning. It helps to minimize damaged hair while leaving the hair soft and manageable.

<u>Ingredients:</u>	<u>Wt%</u>
Water	90.5
Cetearyl Alcohol	3.0
Monalac MPL	2.0
Monaquat SL-5	2.5
Glycerin	2.0

Adjust the pH to 5.0

Appearance: White milky liquid

Viscosity at 25C: 800 cP

Features of Monalac MPL:

Long lasting conditioning
 Highly substantive on skin and hair
 Smooth silky after-feel
 Unusually mild cleanser properties
 Multifunctional surfactant
 Low irritation potential

Hair Conditioner

<u>Ingredients:</u>	<u>Wt%</u>
0.5% Hydroxyethylcellulose in water	93.0
Cetyl Alcohol	3.0
Monasil PLN	4.0

Viscosity: 2000 cps

Opaque Viscous Liquid

Procedure:

Hydrate HEC in water, then add remaining ingredients in order with sufficient heat to melt cetyl alcohol. Add fragrance, preservative, and then package.

Features of Monasil PLN:

Water soluble
 High silicone content
 Highly substantive
 Non irritating
 Long lasting silky after-feel
 Multifunctional surfactant properties

SOURCE: Mona Industries, Inc.: Suggested Formulations

Permanent Wave Lotion

One obvious application for Forestall is in home permanents as a deodorizer/conditioner. The following example is a basic formula without optional ingredients like opacifiers or thickeners.

<u>Ingredients:</u>		Wt%
A Forestall soyaethyl morpholinium ethosulfate		1.4
Brij 35 Laureth-23		2.0
Water		80.1
B Ethanolamine		9.5
C Thioglycolic acid		7.0

Preparation:

Mix (A) with gentle heat if necessary until uniform. Add (B). Add (C). Adjust pH to 9.0-9.5 with additional ethanolamine or thioglycolic acid.
Formula HC-15

Neutralizing Lotion

<u>Ingredients:</u>		Wt%
A Forestall soyaethyl morpholinium ethosulfate		1.4
Brij 35		2.0
Water		92.3
Stabilizer		q.s.
B Hydrogen peroxide, 35%		4.3
C Phosphoric acid		q.s.

Preparation:

Mix (A) with gentle heat until uniform. Add (B) at 25C. Adjust pH to 4.0-5.0 with (C). Optional stabilizers may include sequestrants or antioxidants.
Formula HC-16

SOURCE: ICI Surfactants: Suggested Formulations

Spray Hair Gel

This clear gel has excellent pump spray quality, with moderate hold and little tack on hair under humid conditions. Carbopol Ultrez 10 gives a very clear gel which suspends air bubbles, yet thins when pumped through the sprayer to give a fine mist.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
Deionized Water	29.70
Carbomer/Carbopol Ultrez 10	0.30
Part B:	
Glycerin	2.00
Methylparaben	0.20
Part C:	
Deionized Water	59.37
PVP/VA copolymer/Luviskol VA-73W	8.00
Triethanolamine (99%)	0.12
DMDM Hydantoin/Glydant	0.20
Disodium EDTA/Versene NA	0.01
Part D:	
PEG-45 Palm Kernel Glycerides/Crovol PK-70	0.10

Properties:

pH: 5.3-5.6

Viscosity (cP): 8,000-10,000

Clarity (%T): 89.0-95.0

Preparation Procedure:

1. Part A: Disperse Carbopol Ultrez 10 polymer by sprinkling on the surface of warm (25-45C) deionized water. No mixing required.
2. After the polymer is wetted (no dry white powder visible), mix slowly at low speed.
3. Mix Part B ingredients with heat until paraben is dissolved.
4. Add Part B to Part A with moderate agitation.
5. Mix Part C ingredients until they are dissolved.
6. Add Part C to Parts A and B with moderate agitation.
7. Premelt Crovol PK-70 and add to batch.
8. Add small additional amounts of TEA until gel is clear (pH 5.3-5.6).

Special Instructions:

In this formulation, a PVP/VA (70:30) copolymer in aqueous solution is required to maintain optimum clarity at up to 4% resin solids. Additionally, the best clarity will be obtained when the pH is maintained between 5.3-5.6. Special care should be taken to not exceed this pH.

Additional hold can be obtained by the incorporation of PVP K90 (BASF) at 0.5% to Part B without a reduction of gel clarity.

The viscosity can be lowered by adding very small quantities of Na₂ EDTA (0.01% increments) if so desired.

Note:

Recommended sprayer is Calmar Mark IV high pressure, 1.8 lb. precompression spring, Wt 25 Actuator orifice (Calmar, Inc.).

SOURCE: B.F. Goodrich Co.: Formulation 0003

Spray-On Conditioner

<u>Ingredients:</u>	<u>Wt%</u>
Water	93.35
Tetrasodium EDTA	0.10
Propylene Glycol	2.00
Glycerin	1.25
Quaternium-80 (Abil Quat 3272)	0.30
DL-Panthenol	0.50
Dimethicone Copolyol (Abil B 88183)	1.00
Sucrose Cocoate (Tegosoft LSE 65K)	0.50
PEG-30 Glyceryl Laurate (Tagat L)	1.00
Fragrance	Q.S.
Preservatives	Q.S.

Procedure:

Combine ingredients in order, mixing between additions.

Spray Detangler

This product is sprayed onto the hair to make combing of wet or dry hair easier.

<u>Ingredients:</u>	<u>Wt%</u>
Water	87.3
Propylene Glycol	8.0
Cocamidopropyl Betaine (Tego Betaine L-7)	3.0
PEG-7 Glyceryl Cocoate (Tegosoft GC)	1.0
Dimethicone Copolyol (Abil B 8852)	0.7
Fragrance	Q.S.
Preservatives	Q.S.

Procedure:

Blend the ingredients in order, mixing between additions until the formula is clear.

Comb Through Glosser

<u>Ingredients:</u>	<u>Wt%</u>
Cyclomethicone (and) Dimethiconol (and) Dimethicone (Abil OSW-12)	68.0
Phenyl Trimethicone (Abil AV-20)	20.0
Dimethicone (500 cs)	2.0
Dimethicone (1000 cs)	10.0
Fragrance	Q.S.

Procedure:

Combine ingredients in order - mixing well.

Caution: Traces of water will cause turbidity.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Temporary Hair Color Gel W/Sunscreen

INCI Name/Trade Name:	Wt%
Phase A:	
Deionized Water	10.35
Disodium EDTA	0.05
Glycerin	2.00
SD 40 Alcohol	20.00
Mica (and) Titanium Dioxide (and) Iron Oxide/Colorona Red Gold	5.00
Phase B:	
Carbomer (2% aq. solution)/Carbopol 981	50.00
Phase C:	
Deionized Water	3.00
Triethanolamine (99%)	1.50
Phase D:	
Deionized Water	5.00
Triethanolamine (99%)	1.10
Phenylbenzimidazole Sulfonic Acid (% as acid)/Eusolex 232	2.00

Procedure:

Combine Phase A ingredients sequentially under slow counter rotation agitation. Add Phase B. Mix slowly. Add combined Phase C. Maintain slow agitation until batch appears smooth and homogeneous. Combine Phase D ingredients sequentially; mix to clarity; add to batch slowly. Mix batch to uniformity. Formula EUS2-71-3

Blackstar Hair Gel

INCI Name/Trade Name:	Wt%
Phase A:	
Deionized Water	18.00
Glycerine	2.00
SD 40 Alcohol	10.00
Disodium EDTA	0.05
Iron Oxides (and) Mica/Colorona Blackstar Colors	5.00
Phase B:	
Carbomer/1% Carbopol 940 solution	50.00
Phase C:	
Triethanolamine 99%	0.75
Deionized Water	2.20
Phase D:	
SD 40 Alcohol	10.00
PVP/VA E-735	2.00

Procedure:

Combine Phase A with propeller agitation. When homogeneous, add the remaining phases in order with stirring. Formula AS1-11-1

SOURCE: Rona/EM Industries, Inc.: Suggested Formulations

Washable Crew Cut Wax

This formula was developed to provide good grooming, color, odor, high melting point, and rapid washability. Hair brushes stay clean and the user gets a light shampoo simply by standing under the shower.

<u>Ingredients:</u>	<u>Wt%</u>
Tallow glycerides	15.0
Tween 60	20.0
Arlacel 165 glycerol monostearate and PEG-100 stearate	30.0
Brij 58 Ceteth-20	30.0
Paraffin wax	5.0

Preparation:

Heat all ingredients together at 70C and agitate. Cast into molds and cool.

Formula HC-3

Clear Hair Conditioner Lotion

<u>Ingredients:</u>	<u>Wt%</u>
A Hydroxyethyl cellulose, 3% aqueous	40.0
B Forestall soyaethyl morpholinium ethosulfate	1.4
Water	58.6

Preparation:

Prepare (A) in advance by dispersing hydroxyethyl cellulose in water to yield a 3% solution. Prepare solution (B). Add (B) to (A) with stirring until homogeneous.

Formula HC-8

Cream Hair Rinse

Forestall can also be used effectively in an opacified "cream rinse" lotion like the one shown below.

<u>Ingredients:</u>	<u>Wt%</u>
Cetyl alcohol	1.5
Brij 721 Steareth-21	1.0
Forestall soyaethyl morpholinium ethosulfate	1.4
Water	96.1

Preparation:

Heat to 70C with stirring until uniform. Cool with stirring and add make-up water at 50C.

Formula HC-9

SOURCE: ICI Surfactants: Suggested Formulations

Water-in-Oil Hair Dressing Cream

<u>Ingredients:</u>		<u>Wt%</u>
A Mineral oil		20.0
Ceresin wax		2.0
Beeswax		2.0
Arlacel 186 Glyceryl Oleate and Propylene Glycol		2.0
Sorbitol Solution, USP		18.0
B Water		56.0
Preservative		q.s.

Preparation:

Heat (A) to 70C. Heat (B) to 72C. Add (B) to (A) with continuous agitation. Continue stirring until cream cools to room temperature. Replace water lost by evaporation. Mill to produce maximum smoothness and stability.

Formula HC-1

Formula HC-2 is an example of an oil-in-water hair dressing lotion. Two percent lanolin added to Formula HC-2 improved grooming and stability. No change in emulsifier content or ratio is required.

Oil-in-Water Hair Dressing Lotion

<u>Ingredients:</u>		<u>Wt%</u>
A Mineral oil		35.0
Microcrystalline wax		5.0
Arlacel 60 Sorbitan Stearate		2.0
Tween 60 Polysorbate 60		3.0
B Water		55.0
Preservative		q.s.

Preparation:

Heat (A) to 70C. Heat (B) to 72C. Add (B) to (A) with moderate stirring. Stir to 35C and replace water lost by evaporation.

Formula HC-2

SOURCE: ICI Surfactants: Suggested Formulations

55% VOC Pump Hair Spray

This 55% VOC hair spray incorporates Diaformer Z-400. This deodorized polymer is well suited to lightly fragranced products. It provides a medium hold in this crystal clear, water white spray. Velsan P8-3 acts as a non-greasy superfatting agent.

<u>Ingredients:</u>	<u>Wt%</u>
Diaformer Z-400 (Methacryloyl Ethyl Betaine/Methacrylates Copolymer)	4.00
SD 40 Alcohol	40.00
Velsan P8-3 (Isopropyl C12-15 Pareth-9 Carboxylate)	0.50
Fragrance and Preservative	qs
Deionized Water	qs

Procedure:

Add Diaformer Z-400 to the alcohol mixing well. Add water with mixing. Add remaining ingredients one at a time with mixing.

Appearance: Clear, water white liquid
Formula CHF-14/REF: CL24-76

80% VOC Aerosol Hair Spray

Diaformer Z-AT provides excellent curl retention and hold in this 80% VOC aerosol hair spray. In addition, it provides some conditioning, reduces static, and improves manageability when the hair is combed.

<u>Ingredients:</u>	<u>Wt%</u>
Diaformer Z-AT (Methacryloyl Ethyl Betaine/Methacrylates Copolymer)	3.60
Deionized Water	19.60
Dow Corning 190 (Dimethicone Copolyol)	0.20
SD 40 Alcohol	75.00
Lauramide DEA	0.10
Fragrance and Preservative	qs

Procedure:

Add Diaformer Z-AT to the alcohol mixing well. Add water with mixing. Add remaining ingredients one at a time with mixing.

Aerosolize in the ratio of 80 parts concentrate to 20 parts propellant.

Appearance: Clear, water white liquid
Formula CHF-15/REF: CL24-95

SOURCE: Clariant Corp.: Suggested Formulations

Section VII

Lotions

Body Lotion

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
H ₂ O, Deionized	76.70
Keltrol T	0.60
Tetrasodium EDTA	0.20
Phase B:	
Hest G-7-TO (Glycereth-7 Trioctanoate)	4.00
Hetlan AC (Cetyl Acetate & Acetylated Lanolin Alc.)	3.30
Hetoxamate SA-40 (PEG-40 Stearate)	1.65
Hetoxol STA-2 (Steareth-2)	0.55
Glyceryl Stearate	1.65
Petrolatum	0.75
Hest MS (Myristyl Stearate)	0.70
Hest CSO (Cetearyl Octanoate)	3.65
Hest L-2-O (Laureth-2 Octanoate)	5.00
Lecithin	0.25
Phase C:	
Germaben II E	1.00
Specifications:	
pH: 6.75	
Visc. #3/12: 5000 cps	

Procedure:

1. In a stainless steel kettle, disperse Keltrol T into H₂O using a lightnin' type mixer.
2. When completely dispersed, add Tetrasodium EDTA and heat to 75C.
3. In a separate kettle, combine Phase B and heat to 75C.
4. Add Phase B to Phase A while mixing until uniform.
5. Cool to below 40C and add Phase C.

SOURCE: Heterene, Inc.: Formula HL 94-146

Milk Lotion

<u>Raw Materials:</u>	<u>Wt%</u>
A. Liquid Petrolatum	4.7
Amter LG-OD	2.2
Propylene Glycol Monostearate	0.4
POE (5) Hydrogenated Castor Oil (Emalex HC-5)	1.3
POE (5) Glyceryl Monostearate (Emalex GM-5)	2.8
Butylparaben	0.1
Amihope LL	3.0
B. Acylglutamate HS-11	0.3
1,3-Butylene Glycol	5.0
Methylparaben	0.2
C. Carboxyvinyl polymer	0.2
Water	79.72
D. Sodium Hydroxide (NaOH)	0.08
1. Dissolve (A) at 80C. 2. Dissolve (C), and then neutralize with (D). 3. Add (B) to #2, and dissolve at 80C. 4. Add #3 slowly to (A) with mixing, and then cool to 30C.	
Note: This milk lotion has light touch, and spreads well.	
SOURCE: Ajinomoto USA, Inc.: Suggested Formulation	

Body Lotion, Type O/W, with MPC-Milk Peptide Complex

<u>Raw Materials:</u>	<u>Wt%</u>
a) Eumulgin VL 75	4.50
Lanette O	2.00
Monomuls 60-35C	1.00
Cetiol LC	4.00
Cetiol B	5.00
Cetiol PGL	1.00
Myritol 312	2.00
Copherol F 1300	1.00
Phenonip	0.30
b) Water, distilled	65.85
Phenonip	0.30
Carbopol 980	0.30
Glycerin	2.00
c) KOH 20%	0.75
d) Water, distilled	9.38
Na3-Citrate x 2H2O	0.12
MPC-Milk Peptide Complex	0.50

Manufacture:

- a) Melt and bring to approx. 80C.
- b) Bring to approx. 80C and add to a) with stirring. Continue stirring until cooled to approx. 50C.
- c) Add. Continue stirring until cooled to approx. 30C.
- d) Stir in. Perfume, homogenize.

MPC contains natural polypeptides from milk, in activated form. A protective environment exclusively comprised of milk components such as lactalbumin, lactoglobulin, lactoferrin, lactose and lactate provides for product stability and maintenance of bioactivity. Bioactivity is standardized in every batch of MPC to a representative concentration range (EC50). In vitro bioassays in cell cultures and in vivo tests on epithelial tissue and on human skin give proof of the bioactivity and cosmetic benefits of MPC.

SOURCE: Chemisches Laboratorium Dr. Kurt Richter GmbH: Formulas

Flowable Moisturizing Milk Creamy Lotion

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Monalac MPL	3.0
A	Monaquat SL-5	5.0
A	Water	60.7
A	Potassium Hydroxide (45%)	0.2
B	Monafax MAP 160	0.5
B	Monalac ML	20.0
B	Cetearyl Alcohol	5.1
B	Isopropyl Palmitate	2.0
C	Fragrance	1.0
C	Preservative	2.0

Procedure:

Combine ingredients in both phases separately and heat to 75C. Add (B) to (A) and continue to homogenize. Stir-cool, with minimal aeration, to 40C, add fragrance, color and preservative. Adjust pH to 6.0 then fill.

Physical Properties:

Appearance: Flowable High Moisturizing Milky Lotion
Formulation F-714

Monasil PCA Lotion

<u>Ingredients:</u>	<u>Wt%</u>
Part A:	
Phospholipid SV	3.0
Propylene Glycol	2.0
Germaben IIE	0.4
Titanium Dioxide	0.4
TEA	0.6
Water	84.6
Part B:	
Cetyl Alcohol	2.0
Monafax MAP 160	1.0
Hexyl Laurate	4.0
Monasil PCA	2.0

Procedure:

Heat A & B separately to 60C. Slowly add B to A with homogenization and continue blending for an appropriate time. Stir cool to 40-45C, add fragrance and package.

Typical Properties:

Viscosity: 100,000 cP
pH: 6.4

Formulation F-705

SOURCE: Mona Industries, Inc.: Suggested Formulations

Hand Lotion

An easy-to-make, basic, yet very effective moisturizing hand lotion.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Demineralized Water	82.34
	Hydroxypropyl Methylcellulose/Methocel 40-100	0.10
B	Na ₄ EDTA	0.20
	Triethanolamine	0.08
C	Glycerin	3.00
	Propylene Glycol	3.00
	Propylene Glycol (and) Diazolidinyl Urea (and)	
	Methyl Paraben (and) Propyl Paraben/ Germaben II	0.60
	Sodium C12-15 Pareth-15 Sulfonate/Avanel S-150 CGN	0.50
D	Cetearyl Alcohol (and) Ceteareth-20/Maco1 124	4.50
	Sorbitan Stearate/S-Maz 60	1.00
	Mineral Oil/Drakeol 9	2.00
	Isopropyl Palmitate/Lexol IPP	2.00
	Cyclomethicone/Masil SF-V	0.50
E	Fragrance/Lotion 4047	0.05
F	Citric Acid, 50%	0.13

pH: 6.0-6.5

Viscosity: 4000-6000 cps (Brookfield #2 @ 6 rpm)

Appearance: Glossy white, flowable lotion

Procedure:

In the main vessel, mix the part A ingredients for 10 minutes. Add the part B ingredients, and mix for 20 minutes. Add the part C ingredients, and begin heating the batch to 60C. In a separate vessel, premix part D, heating to 60C. Slowly, with good propeller agitation, add part D to the main batch. When uniform and smooth, begin cooling while maintaining good agitation. Add fragrance and adjust pH when batch is at about 45C. Package at about 35C. Product will remain thin and pourable for several hours at room temperature. It thickens to specified viscosity overnight.

SOURCE: PPG Industries, Inc.: Suggested Formulations

Hand and Body Lotion

This hand and body lotion combines skin moisturizing and protective properties with a non-tacky, natural skin feel.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
Deionized Water	83.90
Disodium EDTA	0.10
Carbomer/Carbopol Ultrez 10	0.20
Part B:	
Propylene Glycol	0.80
Glycerin	5.00
Methylparaben	0.20
Propylparaben	0.10
Part C:	
Mineral Oil/Drakeol 21	4.00
Stearic Acid (triple pressed)/Hystrene 5016	2.00
Glycol Stearate	1.50
Cetyl Acetate/Acetylated Lanolin Alcohol/Acetulan	0.50
Glyceryl Stearate	0.50
Cetyl Alcohol	0.20
Dimethicone/Dow Corning 200 Fluid, 100 cs	0.50
Part D:	
Triethanolamine (99%)	0.50

Properties:

pH: 6.9-7.3

Viscosity (cP) at 25C: 14,000-20,000

Color, odor, appearance: Thick, white, glossy emulsion

Procedure:

1. Add disodium EDTA to the water. Mix until dissolved.
2. Disperse Carbopol Ultrez 10 polymer in the water. After polymer has fully wetted, mix at a slow speed.
3. Combine Part B. Heat slightly and mix until the parabens are dissolved. Add to Part A.
4. Heat the combined Parts A and B to 65C.
5. Combine Part C. Heat to 65C and mix slightly until all the solids are dissolved.
6. Add Part C to Parts A and B. While the temperature is at 65C, add Part D.
7. Mix the emulsion with moderate agitation until the temperature reaches 40C. Cool to room temperature.

SOURCE: B.F. Goodrich Co.: Formulation U0002

Light Moisturizing Lotion

A light, nonoily lotion which spreads easily and is absorbed quickly into the skin. Suitable as a base for an after-shave balm or an after-sun lotion.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	79.5
	Hydroxypropyl Methylcellulose/Methocel 40-100	0.1
	PPG-4 Ethylene Diamine/Mazeen 174	0.2
B	Cetyl Alcohol/CO-1695	2.0
	Stearic Acid/Emersol 132	2.0
	Sorbitan Laurate/S-Maz 20	2.0
	Benzyl Laurate/Mazol EE-1	1.0
	Cyclomethicone/Masil SF-V	2.0
	Dimethicone/Masil SF-1000	0.5
C	Methyl Paraben	0.2
	Imidazolidinyl Urea/Germall 115	0.2
	SD Alcohol 40B	5.0
D	Citric Acid	0.3
	Deionized Water	5.0

pH: 6.0-6.5

Viscosity: 54,000 cps (Brookfield TC @ 1.5 rpm)

7,200 cps (Brookfield #3 @ 12 rpm)

Appearance: Slightly pearlescent, glossy white lotion

Procedure:

Mix part A water and the hydroxypropyl methylcellulose in main tank, begin heating to 70C. After five minutes, add the Mazeen 174 to raise the pH to 8.5-9.0, hydrating the cellulose. In a side vessel, mix and heat the part B ingredients to 70C. Add part B to part A with good mixing. Add the methyl paraben. Cool the batch to 35-40C, add the imidazolidinyl urea and alcohol. Adjust the pH with citric acid dissolved in water.

SOURCE: PPG Industries, Inc.: Suggested Formulation I-205

Lotion

Formula SK-8a is a mineral based oil-in-water lotion with a viscosity in the range of 6-8,000 cps. Thermal stability is good, with some separation noted after the fourth freeze-thaw cycle.

<u>Ingredients:</u>	<u>Wt%</u>
A Light mineral oil	8.0
Stearyl alcohol	1.0
Brij 721 Steareth-21	2.0
Brij 72 Steareth-2	2.0
B Water, deionized	86.9
C Preservative	q.s.
D Fragrance	0.1

Preparation:

Heat (A) to 70C and (B) to 72C. Add (B) to (A) and agitate with propeller. Add (C) below 50C and (D) at 35C. Add water to replace that lost by evaporation. Homogenize.
Formula SK-8a

The formula below provides excellent emollience without excessive greasiness. This might be used for a dry skin preparation.

Dry Skin Lotion

<u>Ingredients:</u>	<u>Wt%</u>
A. Light mineral oil	10.0
Arlamol ISML Isosorbide Laurate	7.0
Silicone oil, 350 cs.	0.5
Brij 700 Steareth-100	2.4
Span 60 Sorbitan Stearate	3.6
B. Water, deionized	72.8
Carbomer 934	0.3
Sorbitol Solution, USP	3.0
C. Sodium hydroxide solution, 10% aqueous	0.3
D. Preservative	q.s.
E. Fragrance	0.1

Preparation:

Heat (A) to 70C and (B) to 72C. Add (B) to (A) slowly with moderate agitation. Add (C). Add (D) below 50C. Add (E) at 35C and replace water lost by evaporation.
Formula SK-11

SOURCE: ICI Surfactants: Suggested Formulations

Lotion for Very Dry Skin

Provides instant softening and moisturization for rough, chapped skin. The greasiness of the petrolatum is greatly reduced by the dry feel of Mazon EE-1, and there is no draggy transition during rubout thanks to Macol 57.

Part:	Ingredient/Trade Name:	Wt%
A	Deionized Water	71.2
	Hydroxypropyl Methylcellulose/Methocel 40-100	0.2
	Triethanolamine, 50%	0.1
B	Glycerin	4.0
	Methyl Paraben	0.2
C	Petrolatum/Perlatum 410 CG	6.0
	Cetearyl Alcohol (and) Ceteareth-20/Macol 124	5.0
	Benzyl Laurate/Mazon EE-1	4.5
	Cetyl Acetate (and) Acetylated Lanolin Alcohol/ Acetulan	4.0
	PPG-10 Butanediol/Macol 57	2.5
D	Imidazolidinyl Urea/Germall 115	0.2
	Deionized Water	2.0
E	Fragrance	0.1
	Citric Acid	Q.S.

pH: 6.3-6.8

Viscosity: 300,000 cps (Brookfield TF @ 1.5 rpm)

Appearance: Glossy white, viscous lotion

Procedure:

Disperse the hydroxypropyl methylcellulose into the part A water. Add the triethanolamine and mix for at least 20 minutes. Add the part B ingredients, and heat to 65C. Premix part C in a separate vessel, heating to 70C. Add part C to A+B with good agitation to form the emulsion. With sweep agitation, cool to 45C. Add part D (premixed), followed by fragrance. Adjust pH, if necessary.

SOURCE: PPG Industries, Inc.: Formulation I-108

Low Cost Moisturizing Lotion

This ultra light lotion leaves the skin with a soft, smooth velvety feel.

<u>Sequence:</u>	<u>Raw Material/INCI Name:</u>	<u>Wt%</u>
1	Deionized Water	77.76
1	Methylparaben	0.25
1	Hampene Na3T/Trisodium EDTA	0.05
1	Liponic EG-1/Glycereth-26	1.25
2	Carbopol 934 (2% aq. disp'n.)/Carbomer	12.00
3	Liponate NPGC-2	2.00
3	Lipomulse 165	1.25
3	Lipopeg 6000DS/PEG-150 Distearate	0.50
3	Lipocol C/Cetyl Alcohol	1.00
3	Lipowax P/Emulsifying Wax, NF	0.60
3	Lipovol CO/Castor Oil	0.50
3	Lipovol ALM/Sweet Almond Oil	0.30
3	Propylparaben	0.10
4	Deionized Water	1.00
4	Triethanolamine, 99%	0.24
5	Deionized Water	1.00
5	Unicide U-13/Imidazolidinyl Urea	0.20

Procedure:

1. Mix and heat Sequence #1 to 80C using high speed on overhead mixer.
2. Heat Sequence #2 to 70C and add to Sequence #1, bringing temperature back to 80C.
3. Mix together Sequence #3 and heat to 78C until completely melted and clear. Then add to batch at medium speed on overhead mixer.
4. Premix Sequence #4 and add to batch at medium/high speed on overhead mixer, while cooling batch to 35C using sweep blade at low speed.
5. Premix Sequence #5 ingredients and add to batch at 35C.

SOURCE: Lipo Chemicals Inc.: Formulation No. 899

Moisture Lotion

<u>Ingredients:</u>		<u>Wt%</u>
A: Squalane		34.5
Beeswax		1.5
Propylene glycol stearate		1.5
Glyceryl stearate SE		3.0
POE (15) Glyceryl stearate		4.0
POE (30) Glyceryl stearate		2.0
B: Acylglutamate HS-11		0.2
Propylene glycol		5.0
Prodew 100		2.0
Methyl paraben		0.2
Water		balance

Procedure:

Dissolve (A) and (B) respectively at 80-85C. Add (A) to (B), stir. Cool down to 50C with rapid agitation by homomixer and then to 35C with moderate agitation.

Formula No. NCC-1003-1

W/O Lotion

<u>Raw Materials:</u>		<u>Wt%</u>
A: Eldew CL-301		2.0
Polyglyceryl-3 diisostearate		0.5
Glyceryl trioctanoate		8.0
Squalane		4.4
B: Dimethicone copolyol		10.0
Dimethicone (highly polymerized)		2.0
C: Glycerin		5.0
Marindew PC-100		0.02
BG-M		1.0
NaCl		0.8
Water		to make 100.0

Procedure:

Heat (A) to 40-50C. Add (B) to (A) with agitation. Mix and dissolve (C) at room temperature and add slowly to the mixture of (A) and (B) with high shear mixing (4000 rpm for 4 minutes).

Features:

A w/o lotion with light and less occlusive touch.

Formula No. M-2

SOURCE: Ajinomoto U.S.A., Inc.: Applications Formulas

Moisturizing Milk Lotion

<u>Ingredient:</u>	<u>Wt%</u>
Part A:	
Monalac MPL	5.0
Monaquat SL-5	5.0
Water	55.7
Potassium Hydroxide (45%)	0.2
Monasil PLN	4.0
Part B:	
Monafax MAP 160	0.5
Monalac ML	20.0
Cetearyl Alcohol (Alfol 1618CG)	5.1
Isopropyl Palmitate	2.0
Part C:	
Fragrance	2.0
Germaben II	0.5

Procedure:

- 1) Combine ingredients in both phases separately.
- 2) Heat both separately to 75C.
- 3) Add Part B to Part A and homogenize for at least 15 minutes.
- 4) Stir cool, with minimal aeration to 45C.
- 5) Add fragrance, color, and preservative (Part C).
- 6) Adjust pH to 6.0-6.5 then fill.

Monasil PCA Lotion

<u>Ingredients:</u>	<u>Wt%</u>
Part A:	
Phospholipid SV	3.0
Propylene Glycol	2.0
Germaben IIE	0.4
Titanium Dioxide	0.4
Triethanolamine (99%)	0.6
Water	84.6
Part B:	
Cetyl Alcohol	2.0
Monafax MAP 160	1.0
Hexyl Laurate	4.0
Monasil PCA	2.0

Procedure:

Heat A & B separately to 65C. Slowly add B to A with homogenization and continue blending for an appropriate time. Stir cool to 40-45C, add fragrance and package.

Typical Properties:

Viscosity: 100,000 cP/pH: 6.4

SOURCE: Mona Industries, Inc.: Suggested Formulations

Non-Greasy W/O Mineral Oil Free Lotion

<u>Ingredients:</u>		<u>Wt%</u>
A	Arlamol HD, Isohexadecane	10.0
	Arlamol E, PPG 15 stearyl ether	5.0
	Arlacel P135, PEG-30 Dipolyhydroxystearate	4.0
	Arlamol ISML, Isosorbide Laurate	1.0
	Arlatone T, PEG 40 Sorbitan Peroleate	0.5
B	Water	74.2
	70% sorbitol solution	5.0
C	Magnesium sulfate	0.3

Procedure:

Heat (A) to 50C, (B) to 55C. Add (B) to (A) with moderate propeller stirring. Homogenize for 20 minutes. Add (C). Continue homogenization until temperature reaches 40C.

Comments:

Viscosity 26,120 cps (Brookfield DV-1+, spindle 3, rpm 3)
Formulation CP 1119

Water-in-Silicone Lotion

<u>Ingredients:</u>		<u>Wt%</u>
A	Dimethicone, 100 cSt	12.0
	Cyclomethicone	10.0
	Cyclomethicone (and) dimethicone copolyol (Dow Corning Formulation Aid 3225C)	10.0
	Arlacel P135 PEG-30 dipolyhydroxystearate	1.1
	Span 80 sorbitan oleate	0.5
	Arlatone T PEG-40 sorbitan peroleate	0.2
	Propylene glycol	0.2
B)	Water	65.7
	Magnesium sulfate	0.3
C)	Preservative	q.s.

Procedure:

Heat (A) to (B) to 50C. Add (B) to (A) slowly with medium stirring. Add (C). Homogenize at 30 second intervals until uniform.

Formulation CP1175

SOURCE: ICI Americas: Suggested Formulations

O/W Body Lotion, Cold Processing

<u>Component:</u>	<u>Wt%</u>
I Eumulgin VL 75/Lauryl Glucoside (and) Polyglyceryl-2-Di-polyhydroxystearate (and) Glycerin	4.5
Cetiol J 600/Oleyl Erucate	4.0
Cetiol V/Decyl Oleate	3.0
Cetiol OE/Dicaprylyl Ether	2.0
Myritol 312/Caprylic/Capric Triglyceride	6.0
Dow Corning 1401 Fluid/Cyclomethicone (and) Dimethiconol	1.0
II Glycerin 86%	2.4
Carbopol 980 2% sol./Carbomer	15.0
KOH 20%	0.6
Water	61.5
Preservative/Perfume	q.s.
Viscosity mPas: 8,800	

Preparation in the Laboratory/Cold Emulsifying Process:

Mix phase I at room temperature, add the previously swollen Carbopol (2%) and the other components of phase II while stirring and homogenize. Duration and intensity of the homogenization depend upon the technical conditions. Finally neutralize with KOH.

Formulation No.: 95/117/59

Light O/W Lotion

<u>Component:</u>	<u>Wt%</u>
I Eumulgin VL 75/Lauryl Glucoside (and) Polyglyceryl-2-Dipolyhydroxystearate (and) Glycerin	4.5
Lanette O/Cetearyl Alcohol	1.0
Cetiol J600/Oleyl Erucate	3.0
Myritol 331/Cocoglycerides	6.0
Cetiol OE/Dicaprylyl Ether	2.0
Baysilon M 350/Dimethicone	0.5
Monomuls 60-35 C/Hydrogenated Palm Glycerides	1.0
Carbopol ETD 2001/Carbomer	0.2
Copherol F 1300/Tocopherol	1.0
II Glycerin 86%	2.0
KOH 20%	0.5
Water	78.3
Preservative/perfume	q.s.
Viscosity mPas: approx. 10,000	

Preparation in the Laboratory:

Heat phase I to 80C. Heat phase II to 80C and add the oil phase while stirring. Allow the emulsion to cool with stirring. The stirring rate must be selected in such a way that the emulsion is kept in continual motion without developing a so-called "stirring cone". Add the Carbopol into the oil phase. Neutralize at 40C. Add preservative and perfume at room temperature.

Formulation No.: 97/004/25

SOURCE: Henkel KGaA: Suggested Formulations

O/W Lotion for Spray Application

<u>Component:</u>	<u>Wt%</u>
I. Emulgade SE/Glyceryl Stearate (and) Ceteareth-20 (and) Ceteareth-12 (and) Cetearyl Alcohol (and) Cetyl Palmitate	4.5
Eumulgin B2/Ceteareth-20	1.0
Cetiol LC/Coco-Caprylate/Caprates	5.0
Cetiol OE/Dicaprylyl Ether	5.0
II. Water, demin.	84.5
Preservative	q.s.
Viscosity, 23C. mPas: <100	
Brookfield	

Preparation in the Laboratory:

1. Heat phase I to 85C and stir until homogeneous.
 2. Heat phase II to 85C and stir slowly into phase I.
 3. Allow the emulsion to cool with stirring; the stirring rate must be selected in such a way that the emulsion is kept in continual motion and no air is trapped.
 4. Add preservative if necessary. Stop stirring at 30C.
- Formulation No. 93/060/24

Soft O/W Body Lotion

<u>Component:</u>	<u>Wt%</u>
I. Emulgade SE/Glyceryl Stearate (and) Ceteareth-20 (and) Ceteareth-12 (and) Cetearyl Alcohol (and) Cetyl Palmitate	8.0
Eumulgin B 2/Ceteareth-20	2.0
Mandelol/Almond oil	2.0
Eutanol G/Octyldodecanol	2.0
Cetiol 868/Octyl Stearate	8.0
II. Water	55.0
Glycerin 86%	5.0
III. Carbopol 980 2% swelling/Carbomer	15.0
IV. NaOH (1% sol)	9.0
Preservative	q.s.
Viscosity, mPas: 8000	
Brookfield, 23C	

Preparation in the Laboratory:

1. Melt phase I at 85C and stir until homogeneous.
 2. Melt phase II at 85C and stir slowly into phase I. Stir at temperature for min.
 3. Allow the emulsion to cool until 50C with stirring and add phase III. Stir until homogeneous.
 4. Neutralize with phase IV. Allow to cool to 30C with stirring.
- Formulation No. 93/027/22

SOURCE: Henkel KGaA: Suggested Formulations

Oil-in-Water Stearic Acid Lotion

Arlacel 165 produces a stable lotion which is made even more elegant by the addition of Arlamol E.

<u>Ingredients:</u>		<u>Wt%</u>
A. Stearic acid, triple pressed	2.0 to 4.0	4.0
Arlamol E		2.0
Arlacel 165 Glyceryl Stearate and PEG-100 Stearate		5.0
B. Sorbitol Solution, USP		10.0
Water	79.0 to 81.0	
Preservative		q.s.

Preparation:

Heat (A) to 70C. Heat (B) to 72C. Add (B) slowly to (A) with rapid agitation. Stir until cooled to room temperature. Replace water lost by evaporation.

Formula SK-2a

Hand Lotion

<u>Ingredients:</u>		<u>Wt%</u>
A. Light mineral oil		8.0
Arlamol E		3.0
Arlacel 165		5.0
Myrj 52, PEG-40 Stearate		2.0
Brij 30, Laureth-4		1.0
B. Water		76.4
Sorbitol Solution, USP		4.0
Carbomer 934		0.3
C. Sodium hydroxide solution, 10% aqueous		0.3
D. Preservative		q.s.

Preparation:

Disperse Carbomer 934 with agitation and heat to 72C. Heat (A) to 70C. Add (B) to (A) with moderate agitation. Add (C). Add (D) below 50C. Stir to 35C and replace water lost by evaporation.

Formula SK-3

Hand Lotion

<u>Ingredients:</u>		<u>Wt%</u>
A. Arlamol E pop 15 stearyl ether		8.0
Arlasolve 200 Liquid (72% active) poe 20 isohexadecyl ether		1.7
Brij 72 poe 2 stearyl ether		2.8
Stearyl alcohol, USP		2.0
B. Water, deionized		85.1
Carbomer 934		0.2
C. NaOH (10% w/w aqueous)		0.2
D. Perfume and preservative		q.s.

Preparation:

Disperse the Carbomer 934 in the water. Heat (A) to 70C and (B) to 72C. Add (B) to (A) with good agitation. Add (C). Add (D) between 35-40C. Pour about 35C.

Formula AE-10

SOURCE: ICI Surfactants: Suggested Formulations

Silky Hand Lotion

This light lotion goes on smooth, and leaves a non-greasy, silicone-fortified barrier.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Phenyl Trimethicone/Masil SF 756	2.0
	Dimethicone/Masil SF 100	0.5
	Isopropyl Palmitate/Lexol IPM	2.0
	Mineral Oil/Drakol 9	3.0
	Cetyl Alcohol/CO-1695	1.5
	Stearic Acid/Emersol 132	0.5
	Ceteareth-20/Maccol CSA-20	2.0
	Sorbitan Stearate/S-Maz 20	1.0
B	Deionized Water	80.3
	Glycerin	3.0
	Propylene Glycol	3.0
	Hydroxypropyl Methylcellulose/Methocel 40-100	0.1
	Triethanolamine	0.3
C	Preservative/Germaben II	0.6
	Fragrance	0.1
	Citric Acid	0.1

pH: 6.0-6.5

Viscosity: 31,000 cps (Brookfield #2 @ 1.5 rpm)

23,000 cps (Brookfield #2 @ 3 rpm)

Appearance: Glossy white, flowable lotion

Procedure:

Premix Part A, heat to 60C. In the main vessel, mix the first four ingredients of Part B. Begin heating to 60C; add the triethanolamine to initiate hydration of the hydroxypropyl methylcellulose. With both parts at 60C, slowly add A to B with high shear mixing. Sweep cool to 35C, adding the Part C ingredients at around 40-45C.

Formulation I-204

SOURCE: PPG Industries, Inc.: Suggested Formulations

Skin Lotion

<u>Raw Materials:</u>		Wt%
A: Mineral oil		5.00
Amiter LGOD		2.00
Propylene glycol stearate		0.50
PEG-5 Hydrogenated castor oil		1.50
PEG-5 Glyceryl stearate		2.50
Butyl paraben		0.10
Aminhope LL		3.00
B: Acylglutamate HS-11		0.30
Carbomer 941		0.20
Sodium hydroxide		0.08
Butylene glycol		5.00
Methyl paraben		0.20
Water		balance

Procedure:

Dissolve Carbomer 941 and sodium hydroxide in water first. Add other ingredients of (B) to the solution and dissolve at 75-80C. Dissolve (A) ingredients at 80C and add (A) to (B) with agitation. Cool down to room temperature with stirring.

Formula No. NON-404

Moisture Lotion

<u>Raw Materials:</u>		Wt%
A: Squalane		34.5
Beeswax		1.5
Propylene glycol stearate		1.5
Glyceryl stearate SE		3.0
POE(15) Glyceryl stearate		4.0
POE(30) Glyceryl stearate		2.0
B: Acylglutamate HS-11		0.2
Propylene glycol		5.0
Prodew 100		2.0
Methyl paraben		0.2
Water		balance

Procedure:

Dissolve (A) and (B) respectively at 80-85C. Add (A) to (B), stir. Cool down to 50C with rapid agitation by homomixer and then to 35C with moderate agitation.

Note: Spreads well on the skin and provides very emollient and moisturizing touch.

Formula No. NCC-1003-1

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Solar Protection Lotion

<u>Ingredient:</u>	<u>Wt%*</u>
A: Dimethicone	2.00
Hydroxyoctocosanyl Hydroxystearate	3.50
Potassium Cetyl Phosphate (Amphisol K)	0.50
Titanium Dioxide (and) C12-15 Alkyl Benzoate (Tioveil FIN)	12.50
Sorbitan Palmitate	3.50
Dilauryl Trimethylpropane Siloxy Silicate	5.00
B: Deionized Water	63.10
Veegum Ultra, Magnesium Aluminum Silicate	0.80
Rhodigel, Xanthan Gum	0.20
Propylene Glycol	5.00
Polysorbate 20	3.50
Sodium Lactate	0.30
Lactic Acid to pH 5.5	q.s.
C: Methylchloroisothiazolinone (and) Methylisothiazol- inone (Kathon CG)	0.10

Procedure:

Weigh the water into a suitable vessel and heat to 75C. Mix with a homogenizer operating at 5000 rpm. Weigh and dry blend the Veegum Ultra and Rhodigel, add them to the water and mix for 20 minutes. Add the remaining Part B ingredients and mix each for 3 minutes. Maintain temperature at 75C. Weigh the Part A ingredients into a separate vessel, mix and heat to 75C. Add Part A to Part B. Mix for 10 minutes at 5000 rpm. Transfer the batch to a propeller mixer and adjust the speed to create a small vortex. Begin cooling while mixing at 40C, add Part C. Package at ambient temperature. Note: Avoid pH of 6.5-7.5 as this may affect SPF value.

*As received basis

SOURCE: R.T. Vanderbilt Co., Inc.: Formulation from A&E Connock, Ltd.

Ultra-AHA Moisturizing Skin Lotion

Formula Profile:

The synergistic mixture of Veegum Ultra and Rhodigel will create an AHA cream that will have great spreadability and feel without the tack and stringiness characteristic of Rhodigel. Veegum Ultra will improve stability and maintain viscosity of the product. The emollients in the oil phase and the humectants in the water phase will support lasting residual skin feel and moisturization.

Ingredients:

	Wt%
A: Water	70.64
Veegum Ultra (Magnesium Aluminum Silicate)	1.0
Xanthan Gum (Rhodigel)	0.5
B: Glycerin	3.0
Butylene Glycol	2.0
C: Cetyl Alcohol	1.0
Glyceryl Monostearate SE (Dermacare MS SE)	3.0
Caprylic/Capric Triglyceride (Neobee M-5)	5.0
C12-15 Octanoate (Finester EH-25)	1.0
Dimethicone (DC-200 fluid-350 cts)	1.0
Steareth-2 (Brij 72)	0.83
Steareth-21 (Brij 721)	0.83
D: Preservative	qs
E: Glycolic Acid	7.0
F: Fragrance	qs
G: Triethanolamine	3.2
Citric Acid Adjust pH to 3.8+/-0.2	qs

Procedure:

Step 1: Dry blend Veegum Ultra and Rhodigel in Part A. (Dry blending reduces the clumping of Rhodigel and allows for the simultaneous introduction of ingredients). Sift the powder into an established vortex in the water. Veegum Ultra will be hydrated within 15 minutes. Allow about 45 minutes for Rhodigel to dissolve completely.

The addition of any other ingredients during the hydration process will interfere with the hydration of Veegum Ultra and will reduce or even eliminate the desired properties generated by the Magnesium Aluminum Silicate.

Step 2: Begin heating water phase in Step 1 to 75C.

Step 3: Once the hydration process is completed, add remaining water phase ingredients from Part B to Step 2.

Step 4: Blend oil phase ingredients in Part C and heat the oil phase to 75C.

Step 5: When both phases are at 75C, add oil phase in Step 4 to water phase Step 2.

Step 6: Cool to 45C. Add Part D-Preservative to Step 2.

Step 7: Add Part E-AHA-Glycolic Acid to Step 2.

Step 8: Add Part F-Fragrance to Step 2.

Step 9: Cool to 35C. Adjust pH with part G.

Viscosity: 50,000+-10,000 cps after 24 hours.

pH: 3.6-4.0

Stable emulsion that passes 3 month stability testing.

SOURCE: R.T. Vanderbilt Co., Inc.: Formula No. 470

Ultra-AHA Moisturizing Skin Lotion**Formula Profile:**

The synergistic mixture of Veegum Ultra and Rhodigel will create an AHA cream that will have great spreadability and feel without the tack and stringiness characteristic of Rhodigel. Veegum Ultra will improve stability and maintain the viscosity of the product. The emollients in the oil phase and the humectants in the water phase will provide residual skin feel and moisturization.

Ingredients:

	Wt%
A: Water	73.34
Veegum Ultra (Magnesium Aluminum Silicate)	1.5
Rhodigel (Xanthan Gum)	0.5
B: Glycerin	3.0
Butylene Glycol	2.0
C: Cetyl Alcohol	1.0
Glyceryl Monostearate SE (Dermacare MS SE)	3.0
Caprylic/Capric Triglyceride (Neobee M-5)	5.0
C12-15 Octanoate (Finester EH-25)	1.0
Dimethicone (DC-200 fluid-350 cts)	1.0
Steareth-2 (Brij 72)	0.83
Steareth-21 (Brij 721)	0.83
D: Preservative	qs
E: Glycolic Acid	7.0
F: Fragrance	qs
G: Triethanolamine	3.2
Citric Acid Adjust pH to 3.8+-0.2	qs

Procedure:

Step 1: Dry blend Veegum Ultra and Rhodigel in Part A. (Dry blending reduces the clumping of Rhodigel and allows for the simultaneous introduction of ingredients). Sift the powder into an established vortex in the water. Veegum Ultra will be hydrated within 15 minutes. Allow about 45 minutes for Rhodigel to dissolve completely.

The addition of any other ingredients during the hydration process will interfere with the hydration of Veegum Ultra and will reduce or even eliminate the desired properties generated by the Magnesium Aluminum Silicate.

Step 2: Begin heating water phase in Step 1 to 75C.

Step 3: Once the hydration process is completed, add remaining water phase ingredients from Part B to Step 2.

Step 4: Blend oil phase ingredients in Phase C and heat the oil phase to 75C.

Step 5: When both phases are at 75C, add oil phase in Step 4 to water phase Step 2.

Step 6: Cool to 45C. Add Part D-Preservative to Step 2.

Step 7: Add Part E-AHA-Glycolic Acid to Step 2.

Step 8: Add Part F-Fragrance to Step 2.

Step 9: Cool to 35C. Adjust pH with Part G.

Product Specifications:

Viscosity: Brookfield LVT: 60,000+-10,000 cps after 24 hours
pH: 3.6-4.0

This formula produces a stable emulsion-passes 3 month testing

SOURCE: R.T. Vanderbilt Co., Inc.: Formula No. 476

Vanishing Lotion

<u>Ingredients:</u>	<u>Wt%</u>
A: Arlamol ISML, isosorbide monolaurate	4.00
Stearyl alcohol	1.00
Arlamol E, POP (15) stearyl ether	1.00
Dimethicone, 350 cs.	0.50
Brij 700, POE (100) stearyl ether	2.00
Brij 72, POE (2) stearyl ether	2.00
B: Water	79.05
Carbomer 934	0.15
Magnesium Aluminum Silicate solution (5% aqueous)	10.00
C: Sodium hydroxide (10% aqueous)	0.15
D: Preservative	0.10
E: Fragrance	0.05

Suggested Preparation:

Heat A to 70C and B to 72C. Add B to A with moderate agitation. Add C. Add D below 50C. Add E at 35C and add water to compensate for loss due to evaporation.

Comments:

This formula would be suitable for a hand lotion. It is non-greasy and has a very pleasant afterfeel. It is relatively inexpensive since it contains nearly 90% water.

This formula is stable for at least 13 weeks at 5C, and room temperature and for at least six freeze-thaw cycles.

Emollient Lotion

<u>Ingredients:</u>	<u>Wt%</u>
A: Arlamol E pop 15 stearyl ether	12.0
Brij 72 poe 2 stearyl ether	4.8
Brij 721 poe 21 stearyl ether	1.2
B: Water, deionized	82.0
C: Perfume and preservative	q.s.

Preparation:

Heat (A) to 70C and (B) to 72C. Add (B) to (A) slowly. Add (C) at about 40C. Pour about 35C.

Formulation AE-9

SOURCE: ICI Surfactants: Suggested Formulations

Velvet Care Lotion

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Polyglyceryl-3 Methylglucose Distearate (Tego Care 450)	2.0
Apricot Oil	2.0
Safflower Oil	1.0
Cyclomethicone	3.5
Caprylic/Capric Triglycerides (Tegosoft CT)	3.0
Octyl Stearate (Tegosoft OS)	2.0
Rose Extract	Q.S.
Lavender Extract	Q.S.
Phase B:	
Glycerin	3.0
Water	82.1
Phase C:	
Carbomer 941	0.2
Isopropyl Palmitate (Tegosoft P)	0.8
Phase D:	
Sodium Hydroxide (10% solution)	0.4
Phase E:	
Fragrance	Q.S.
Preservatives	Q.S.

Procedure:

1. Heat the ingredients of Phase A to 80C.
2. Heat the ingredients of Phase B to 80C.
3. Add A to B with agitation.
4. Homogenize
5. Disperse Carbomer into the oil/ester add to A/B. Homogenize.
6. Cool to 35-40C with stirring.
7. Add phase D/E. Stir.
8. Mix until viscosity profile is obtained.

O/W AHA Lotion with Lactic Acid

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Ceteareth-15 (and) Glyceryl Stearate (Tego Care 215)	6.0
Mineral Oil	4.0
Octyl Stearate (Tegosoft OS)	5.0
Caprylic/Capric Triglyceride (Tegosoft CT)	5.0
Stearyl Alcohol (Tego Alkanol 18)	5.0
Phase B:	
Glycerin	3.0
Water	69.65
Phase C:	
Lactic Acid (85%)	2.35
NaOH (10% aq. solution)	Q.S.
Perfume, Preservatives	Q.S.

Procedure:

Heat A and B to 80C and mix. Homogenize. Cool with stirring to 40C. Add Phase C and cool to 30C or lower. Adjust pH to 4.0-4.5 with NaOH.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Water-in-Oil Cleansing Lotion with Ethanol

<u>Ingredients:</u>	<u>Wt%</u>
A) Arlacel P-135, PEG-30 Dipolyhydroxystearate	3.5
Arlamol HD, Isohexadecane	6.0
Caprylic/capric triglycerides	2.0
Diocetyl adipate	2.0
Mineral oil	8.0
Silica dimethyl silylate	0.5
B) Glycerin	4.0
MgSO ₄ ·7H ₂ O, Magnesium sulfate	0.5
Water	48.5
Preservative, Quaternium 15	q.s
C) Ethanol	25.0
Perfume	q.s

Procedure:

Heat (A) and (B) to 75C to 85C. Slowly add (B) to (A) while stirring intensively. Homogenize thoroughly for 1 minute. Allow to cool to <30C while stirring. Add phase (C) slowly while stirring intensively.

Comments:

Viscosity: 7, a s
 (Brookfield L ndle C/rpm 6
 Formula CP 1193

Hydroalcoholic

<u>Ingredients:</u>	<u>Wt%</u>
A Isopropyl lanolate	1.0
Arlasolve 200 Liquid (72% active) poe 20 isohexadecy ether	
Arlamol E pop 15 stearyl ether	5.0
B Hydroxyethylcellulose	0.2
Carbomer 934	0.5
Water, deionized	58.9
C NaOH (10% w/w aqueous)	0.5
D Alcohol, SDA Formula No. 40	30

Preparation:

Heat (A) to 75C. Disperse Hydroxyethylcellulose in half of the water and Carbomer 934 in the other half, combine. Heat (B) to 75C. Add (B) to (A) with agitation. Stir five minutes and add (C). Cool to 35C and add (D). Stir to room temperature. Formula AE-8

SOURCE: ICI Surfactants: Suggested Formulations

Water-In-Oil Mineral Oil Lotions

Formula SK-6, a unique Gel Base, serves as a starting point in formulating W/O emulsions which have exceptional water repellency and pleasant application feel without the usual greasiness or tackiness characteristic of many W/O emulsions.

Gel Base

<u>Ingredients:</u>	<u>Wt%</u>
A Arlacel 186 Glycerol Oleate and Propylene Glycol	10.0
B Sorbitol Solution, USP	90.0
Preservative	q.s.

Preparation:

Add (B) to (A) in small increments, mixing thoroughly between additions. As the addition is continued, the product thickens to form a viscous translucent gel.

Formula SK-6

Water-in-Oil Mineral Oil Lotion

The Gel Base concept of formulating can be used in preparing water-in-oil lotions which have the unique property of water repellency without an oily feel. A small quantity of Tween 80, a hydrophilic surfactant, is added to promote emulsion stability. Although the Gel Base in the following formula is shown as a separate entity, it may be prepared in situ by replacing the 30% Gel Base with 27% Sorbitol Solution and 3% Arlacel 186 (the ratio of 9 to 1 shown in Formula SK-6).

<u>Ingredients:</u>	<u>Wt%</u>
A Formula SK-6 Gel Base	30.0
Mineral oil	15.0
Ceresin wax	0.5
Beeswax	0.5
Tween 80 Polysorbate 80	0.5
B Water	53.5
Preservative	q.s.

Preparation:

Heat (A) to 70C. Heat (B) to 72C. Add (B) to (A) with continuous agitation. Continue agitation to room temperature. Replace water lost by evaporation.

Formula SK-7

SOURCE: ICI Surfactants: Suggested Formulations

Water-In-Oil Moisturizing Lotion

<u>Ingredients:</u>	<u>Wt%</u>
A: Veegum	1.3
Water	55.7
Magnesium Sulphate	0.5
B: Mineral Oil, Light	9.0
Polysynlane	10.0
Nimlesterol D	7.5
Amerchol L101	9.0
70% Sorbitol Solution	5.0
Witcamide 511	2.0
Preservative	q.s.

Procedure:

Add the Veegum to the water slowly, agitating continually until smooth. Add the magnesium sulphate and mix until smooth. Blend B well and add A to B; mix until smooth and uniform.

Packaging:

This formula is a rich, pourable or pumpable lotion and may be dispensed from a suitable glass or plastic bottle.

Comments:

This formula is an elegant, economical, and easily prepared water-in-oil lotion for softening and moisturizing dry skin.

The use of Veegum as an emulsion stabilizer allows a relatively large internal phase without sacrificing product stability. The amount of Veegum used controls the viscosity. In addition, Veegum contributes to the rich, nongreasy feel imparted by the highly emollient oil phase.

This formula would make an elegant addition to a treatment line as a super moisturizer for dry skin.

The CTFA adopted name for Veegum is magnesium aluminum silicate.

Hand Lotion

<u>Ingredients:</u>	<u>Wt%</u>
Glyceryl Monostearate (S.E.)	2.7
Cetyl Alcohol	1.5
Silicone 200 Oil	1.5
Lanolin Oil	2.0
Polysynlane	3.0
Sodium Lauryl Sulfate	0.3
Preservative	0.2
Water	ad. 100.0

SOURCE: Polyester Corp.: Suggested Formulations

Section VIII

Shampoos

Anti-Dandruff Shampoo with Zinc Pyrithione

This anti-dandruff shampoo, which contains cationic conditioning agents, uses zinc pyrithione as the active ingredient. The zinc pyrithione is kept suspended using Carbopol ETD 2020.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
1. Deionized Water	38.90
2. Acrylates/C10-30 Alkyl Acrylate Crosspolymer/ Carbopol ETD 2020	1.00
3. Sodium Hydroxide (18%)	0.10
Part B:	
4. Propylene Glycol	5.00
5. Sodium Lauryl Sulfate (29%)/Standapol WAQ-LC	16.00
6. Sodium Laureth Sulfate (3 mole, 30%)/Standapol ES-3	16.00
7. Cocamidopropyl Betaine/Incronam 30	4.00
Part C:	
8. Deionized Water	12.00
9. Polyquaternium-10/Ucare Polymer JR-400	0.25
10. DMDM Hydantoin/Glydant	0.30
11. Sodium Hydroxide (18%)	1.30
Part D:	
12. Polyquaternium-39/Merquat 3330	1.00
13. Dimethicone Copolyol/Dow Corning 5324 Fluid	0.20
14. Zinc Pyrithione (48%)/Zinc Omadine FPS	2.50
15. Fragrance/Spicy Floral Fragrance #A41073	0.40
16. FD&C Blue #1 (0.1%)	1.05
Color, Odor, Appearance: Opaque, light blue, viscous liquid	
Actives (1%): 11.14	
pH: 5.8-6.2	
Viscosity (cP): 6,000-9,000	
Yield Value (dynes/cm ²): 180-250	
Stability: Passed 45C, accelerated-28 days	
Freeze/thaw-5 cycles	

Preparation Procedure:**Part A:**

1. Disperse Carbopol ETD 2020 in warm (45C) deionized water using rapid agitation. Reduce mixing speed and mix for 20 minutes. Partially neutralize with sodium hydroxide.

Part B:

2. Add Part B ingredients in order to Part A using slow mixing.

Part C:

3. Disperse Ucare JR-400 in deionized water (heat to help hydration). Add Glydant and sodium hydroxide. Mix until uniform. Add Part C to batch.

Part D:

4. Add Part D ingredients in order to batch.

Special Notes & Precautions:

1. Do not use a chelating agent as this will deactivate the zinc pyrithione.
2. When using zinc pyrithione, be sure it is uniform and has not frozen.
3. Assay for zinc pyrithione can be performed using an iodine titration. Call Olin (203-271-4000) for the procedure.

SOURCE: B.F. Goodrich Co.; Formulation C0075

Clear and Mild Shampoo

This shampoo is near water-white in clarity and color. The amphoteric surfactant, in combination with SLES and ALS, is the basis of this gentle-cleansing formula. Addition of only 0.60 wt% Benecel HPMC is needed to boost the viscosity from 2,900 cps (mPas) to 9,500 cps (mPas), yielding a rich, highly viscous shampoo that pours smoothly. This is possible due to the thickening efficiency of Benecel and the pseudoplastic rheology it imparts.

Ingredients:	Wt%
Distilled water	q.s. to 100.00
Ammonium lauryl sulfate, 30%	27.50
Disodium cocoamphodiacetate, 50%	6.90
Sodium laureth sulfate, 60%	5.70
Benecel MP 943 R	0.60
DMDM hydantoin	0.30
Methyl paraben	0.10
Citric acid	to pH 5.5

Procedure:

1. Disperse Benecel by adding to the vortex of well-agitated water. Heating to 40-45C will accelerate hydration. Mix until fully dissolved.
2. In a separate container, disperse the methyl paraben in the DMDM hydantoin. Add to the Benecel solution. Mix until fully dissolved.
3. Add the remaining ingredients, one at a time, mixing well between additions.
4. Adjust pH to 5.5 with citric acid.
5. When temperature falls to below 40C, add fragrance.

Stability of Clear and Mild ShampooViscosity, cps (mPas)

Brookfield LVT, 30 rpm, 25C

Room Temperature 50C

24 hours	9,120	-----
3 days	9,850	-----
1 week	11,900	11,900
2 weeks	11,700	10,800
4 weeks	12,500	11,300

This shampoo exhibited no change after exposure to three freeze-thaw cycles.

SOURCE: Aqualon Division/Hercules Inc.: Formulation B02-04W

Coconut Shampoo
(35% Real Soap)

	<u>Wt%</u>
Emery 621 Coconut Fatty Acid (acid value 263)	29.6
Caustic potash (100%)	7.9
Water	to 100.0

Procedure:

Dissolve the caustic in the necessary amount of water, heating to 49-54C (120-130F), then add the fatty acid in a slow steady stream. Agitate while mixing the fatty acid and caustic until saponification is complete. The reaction mixture should be heated to 66-71C (150-160F) during the final stages of saponification.

Check the neutrality of the soap and adjust as necessary. Perfume as desired. Allow the soap to stand and settle for several days at near freezing temperatures, if possible, and decant or filter the soap.

Properties and Variations:

This soap is characterized by its clarity and profuse sudsing. If it clouds on standing, a trace of sequestering agent (0.1-0.5%) will restore brilliance.

Alcohol may be substituted for a portion of the water in any of these formulas. Alcohol will improve clarity and increase the resistance of the soap to low temperature precipitation and gel formation, but it will also reduce foaming.

Carbitol, glycerine, and various glycols may be used to increase the viscosity of the soap. Perfumes are generally used in small amounts to impart a distinctive and pleasant odor.

Coconut-Oleic Shampoo
(35% Real Soap)

	<u>Wt%</u>
Emery 621 Coconut Fatty Acid (acid value 263)	15.1
Emersol 221 Oleic Acid (acid value 203)	15.1
Caustic potash (100%)	7.1
Water	to 100.0

Procedure:

Blend coconut and oleic acids and proceed as for the formulation above, Coconut Shampoo. Perfume as desired.

Properties and Variations:

This shampoo exhibits good foaming and foam stability. It will have only a trace of color. If a gold-colored shampoo is preferred, use of Emersol 210 Oleic Acid (A) is suggested.

SOURCE: Henkel Corp., Emery Group: Fatty Acids and Their Water Soluble Soaps: Suggested Formulations

Cream Shampoo

This opaque shampoo is a soft cream suitable for tube dispensing. Mild ingredients such as Jordapon CI-75, Mafo CSB-50, and Mazox CAPA make this system gentle enough to use every day.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	58.9
	Sodium Cocoyl Isethionate (and) Stearic Acid/Jordapon CI-75	19.2
	Sodium Lauryl Sulfate/Stepanol WA-Extra	6.7
	Glycol Stearate/Mapeg EGMS	2.0
	Sodium Isethionate, 56%/Witconate NIS	3.0
	Methyl Paraben	0.2
	Na4EDTA	0.2
B	Cocamidopropyl Hydroxysultaine/Mafo CSB-50	2.0
	Cocamidopropyl Amine Oxide/Mazox CAPA	3.3
	Propylene Glycol	2.0
	Cocamide DEA/Mazamide JT-128	2.0
C	Quaternium 15/Dowicil 200	0.2
	Fragrance	0.3
	Citric Acid	Q.S.

pH: 6.2-6.7

Viscosity: 100,000 cps (Brookfield TB @ 0.3 rpm)

Appearance: White pearlescent soft cream

Procedure:

Blend the part A ingredients, heating to 65C to dissolve all solids. Remove the heat and add the part B ingredients in order. When uniform, cool to 40C and add the part C ingredients. Product will be non-viscous at first, and will develop into a cream overnight.

SOURCE: PPG Industries, Inc.: Formulation A-113

Crystal Clear Conditioning Shampoos

These are crystal clear, mild formulations. Sandopan DTC acid is a multi-functional surfactant which also improves the cationic deposition of cationic polymers. By reducing the wash-off of the cationic polymer, Sandopan DTC acid can improve conditioning of the hair and skin.

Crystal Clear Luxury Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
Standapol A	33.00
Sandopan DTC Acid	8.00
*Monamid 716	3.00
*Polymer JR 30M	0.25
Versene NA	0.10
Glydant	0.50
Deionized Water	55.10
Fragrance	0.05
Potassium Hydroxide (To pH=5.5)	qs

Properties:

- Viscosity: 2500
- Ross Miles Foam Height: 195/190
- % Solids: 22.50
- *Viscosity can be altered by increasing/decreasing Polymer JR or Monamid 716.

Crystal Clear Conditioning Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
Standapol A	33.00
Sandopan DTC Acid	8.00
*Monamid 716	3.00
*Polymer JR 30M	0.50
Versene NA	0.10
Glydant	0.50
Deionized Water	52.85
Fragrance	0.05
Potassium Hydroxide (To pH=5.5)	qs

Properties:

- Viscosity: 3000
- Ross Miles Foam Height: 190/185
- % Solids: 22.75
- *Viscosity can be altered by increasing/decreasing Polymer JR or Monamid 716.

Procedure:

Hydrate Polymer JR in about 1/2 of the water by slowly sifting it in with moderate stirring. In a separate vessel, add the Sandopan DTC acid to the other 1/2 of the water. Neutralize this mixture to pH=5.5 with potassium hydroxide. Add remaining ingredients in order, mixing well after each addition. Finally, add the polymer solution and mix well. Adjust final pH to 5.5-6.0 if needed.

SOURCE: Clariant Corp.: Ref: CL29-49: CHS-40, 41

Deodorizing Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Water	32.60
Tetrasodium EDTA	0.10
Sodium Lauryl Sulfate (28%)	17.50
Sodium Laureth Sulfate (28% 2M E.O.)	20.00
PEG-20 Glyceryl Laurate (Tagat L)	2.50
PEG-7 Glyceryl Cocoate (Tegosoft GC)	2.50
PEG-18 Glyceryl Oleate/Cocoate (Antil 171)	2.50
Glycol Distearate (Tegin EGS)	3.00
Zinc Ricinoleate (and) Triethanolamine (and)	
Dipropylene Glycol (and) Lactic Acid (Tego Deo HY 77)	1.80
Phase B:	
Water	10.00
Preservatives	Q.S.
Fragrance	Q.S.
Cocamidopropyl Betaine (Tego Betaine L 7)	7.50
Citric Acid (20% solution)	to pH 7.0
Sodium Chloride (25% solution)	Q.S.
Procedure:	
1. Heat Phase A to 70C. Add components in order, mixing well between additions. Avoid foam.	
2. Begin cooling. Slowly cool to 35-40C. Some of the water of Phase B can be used to start the cooling.	
3. Add the ingredients of Phase B.	
4. Adjust pH and viscosity.	

Conditioning Shampoo for Treated Hair

<u>Ingredients:</u>	<u>Wt%</u>
Tetrasodium EDTA	0.1
Water	41.5
Ammonium Laureth Sulfate (28% 2M. E.O.)	20.0
Ammonium Lauryl Sulfate (28%)	25.0
Quaternium-80 (Abil Quat 3272)	0.3
Dimethicone Copolyol (Abil B 8851)	0.3
Dimethicone Copolyol (Abil B 88183)	0.3
Dimethicone Propyl PG-Betaine (Abil B 9950)	1.0
Citric Acid	to pH 6.5
Fragrance	Q.S.
Color	Q.S.
Preservative	Q.S.
PEG-18 Glyceryl Oleate/Cocoate (Antil 171)	1.5
Cocamidopropyl Betaine (Tego Betaine L-7)	7.0
Glycol Distearate (and) Steareth-4 (Tego Pearl N 100)	3.0
Ammonium Chloride (25% solution)	Q.S.
Procedure:	
1. Dissolve the Tetrasodium EDTA in the water.	
2. Add ingredients in order, mixing between additions. Avoid air entrapment.	
3. Slowly mix in the Antil 171. Mix until dispersed.	
4. Add the Tego Betaine L-7. 5. Add the Tego Pearl N 100.	
6. Adjust viscosity with the 25% solution of Ammonium Chloride.	

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Frequent Use Shampoo

This pearlescent shampoo provides gentle cleansing with protective conditioning. Glucamate DOE-120 is used to thicken this mild cleansing system which contains cocoamphodiacetate and sulfosuccinate. Glucam E-20 and Ucare Polymer JR-400 have been included for humectance and conditioning, respectively. This formulation is recommended for normal to dry hair.

<u>Ingredients:</u>	<u>Wt%</u>
Texapon NSO (Sodium Laureth Sulfate)	7.00
Dehyton G (Disodium Cocoamphodiacetate)	3.00
Texapon SB-3 (Disodium Laureth Sulfosuccinate)	1.00
Euperlan PK 3000-AM (Glycol Distearate and Laureth-4 and Cocamidopropyl Betaine)	1.00
Glucamate DOE-120 (PEG-120 Methyl Glucose Dioleate)	1.50
Deionized Water	84.30
Ucare Polymer JR-400 (Polyquaternium-10)	0.25
Glucam E-20 (Methyl Gluceth-20)	1.50
Sodium Chloride	0.45
Preservative and Fragrance	q.s.

Procedure:

Disperse Ucare Polymer JR-400 in water with moderate agitation and gentle heating to 50C. Add Glucamate DOE-120 and continue heating until dissolved. Remove heat. Add the surfactants and Glucam E-20. Add preservative and fragrance. Adjust pH to 6.5. Package.

Performance Data:

Viscosity: 4,300 cps (20C, LVT, 3, 12 rpm)

pH: 6.5

Formulation E941-129-10

Daily Use Shampoo

Glucamate DOE-120 is used to thicken this mild surfactant system in conjunction with the lauryl glucoside. The cocamidopropyl betaine enhances the foam feel. Ucare Polymer LK provides the light conditioning effect desired in this daily use shampoo. In total, the washing active substances for this pearlescent formulation are 11%.

<u>Ingredients:</u>	<u>Wt%</u>
Standapol ES-2 (Sodium Laureth Sulfate)	24.00
Velvetex BK-35 (Cocamidopropyl Betaine)	6.00
Plantaren 1200 (Lauryl Glucoside)	5.00
Euperlan PK 3000-AM	1.50
Glucamate DOE-120 (PEG-120 Methyl Glucose Dioleate)	1.00
Ucare Polymer LK (Polyquaternium-10)	0.35
Deionized Water	61.85
Sodium Chloride	0.30
Preservative and Fragrance	q.s.

Procedure:

Disperse Ucare Polymer LK in water with moderate agitation and gentle heating to 50C. Add Glucamate DOE-120 and continue heating until the Glucamate DOE-120 has dissolved. Add the surfactants and the Euperlan with continued stirring. Add the sodium chloride, preservative and fragrance. Adjust the pH to 6.5. Package.

Formulation E921-146-4

SOURCE: Amerchol: Suggested Formulations

Gentle Everyday Shampoo

<u>Ingredients:</u>		Wt%
Distilled water	q.s. to	100.00
Sodium laureth sulfate, 28%		19.60
Cocamidopropyl betaine, 35%		11.00
Sodium lauroyl sarcosinate, 30%		9.60
PEG-150 distearate		2.90
Benecel MP 943 R		1.10
Monochloroisothiazolinone and methylisothiazolinone, 1.5%		0.08

Procedure:

1. Disperse the Benecel by adding to the vortex of well-agitated water. Heating to 40-45C will accelerate hydration. Mix until fully dissolved.
2. Add the surfactants, one at a time, mixing well between each addition.
3. Heat to 70-75C. Add the PEG-150 distearate. Mix until dissolved. Turn heat off.
4. When temperature reaches 40C or below, add fragrance and preservative.

Formula B02-02W

Self-Adjusting Conditioning Shampoo

<u>Ingredients:</u>		Wt%
Distilled water	q.s. to	100.00
TEA-lauryl sulfate, 40%		22.25
Dihydroxyethyl tallow glycinate, 40%		7.10
Lauramide DEA		3.50
Cocodimonium hydrolyzed animal protein		0.80
Benecel MP 943 R		0.60
Methylchloroisothiazolinone and methylisothiazolinone, 1.5%		0.08
Citric acid	to pH	5.5

Procedure:

1. Disperse the Benecel by adding to the vortex of well-agitated water. Heating to 40-45C will accelerate hydration. Mix until fully dissolved.
2. Add the remaining ingredients, one at a time, mixing well between each addition.
3. Adjust to pH 5.0 with citric acid.
4. When temperature falls to below 40C, add fragrance.

Formula B02-03W

SOURCE: Aqualon Division, Hercules Inc.: Suggested Formulations

Gentle Shampoo

This shampoo provides gentle and thorough cleansing, while imparting softness and manageability to hair.

<u>Ingredients:</u>	<u>Wt%</u>
Water	29.5
Sodium Chloride	1.0
Sodium Laureth (2) Sulfate (25%)	35.0
Sodium Lauryl Sulfate (30%)	27.5
Monalac MAB	5.0
Monalac MPL	2.0

Adjust the pH to 6.0

Appearance: Clear viscous liquid

Viscosity at 25C: 23,000 cP

Solids (%): 20

Features of Monalac MAB:

Effective conditioning to skin and hair

Provides mild cleansing

High foaming primary surfactant

Excellent viscosity building properties

Anti-irritant for anionics and cationics

Compatible with all surfactant types

Gentle Shampoo

This shampoo provides gentle and thorough cleansing, while imparting softness and manageability to hair.

<u>Ingredients:</u>	<u>Wt%</u>
Water	29.5
Sodium Chloride	1.0
Sodium Laureth (2) Sulfate (25%)	35.0
Sodium Lauryl Sulfate (30%)	27.5
Monalac MO	5.0
Monalac MPL	2.0

Adjust the pH to 6.0

Appearance: Clear viscous liquid

Viscosity at 25C: 7500 cP

Solids (%): 20

Features of Monalac MO:

Lather and foam enhancement

Extra conditioning for skin and hair

Excellent viscosity building properties

Contributes gentle cleansing

Low irritation potential

Cationic at acid pH

SOURCE: Mona Industries, Inc.: Suggested Formulations

Hair and Body Shampoo

<u>Raw Materials:</u>	<u>Wt%</u>
Plantaren 2000 UP/Lauryl Glucose	5.0
Texapon NSO/Sodium Laureth Sulfate	25.0
Gludain WK/Sodium Cocoyl Hydrolyzed Wheat Protein	8.0
Gludain WQ/Lauryldimonium Hydroxypropyl Hydrolyzed Wheat Protein	3.0
Eumulgin L/PPG-1-PEG-9-Lauryl Glycol Ether Glucamate	
DOE 120	0.5
NaCl	1.5
Water, preservative, perfume	ad 100

pH Value: 6.0

WAS: 12.5

Viscosity mPas: approx. 1500

Preparation:

Mix all components successively at room temperature while stirring. The pH value is adjusted with citric acid.

Formulation No. 94/218/28

Shampoo

<u>Raw Materials:</u>	<u>Wt%</u>
Texapon NSO/Sodium Laureth Sulfate	40.0
Dehyton K/Cocamidopropyl Betaine	12.5
Lamesoft PW 25/Cetyl Palmitate (and) Beheneth-10 (and) Hydrogenated Castor Oil (and) Glyceryl Stearate	5.0
Cosmedia Guar C 261 N/Guar Hydroxypropyl Trimonium Chloride	0.25
Methocel E4M Premium EP/Hydroxypropyl Methylcellulose	1.5
Water	40.75
Preservatives	n.B.
Viscosity mPas: 6000	
pH value: 5.5	

Preparation in the Laboratory:

Of Methocel E4M Premium EP and Water has to be manufactured a clear swelling. In this swelling Cosmedia C 261 N has to be strewed and homogeneous distributed. With addition of citric acid the pH value will be slightly acidified, which means that Cosmedia Guar is also starting to swell. After completed swelling Texapon NSO, Dehyton K and Lamesoft PW 45 will be stirred homogeneous into the swelling. At the end the pH value will be focused.

Formulation No. 96/020/3

SOURCE: Henkel KGaA: Suggested Formulations

High Performance Low Irritation Shampoo

<u>Ingredients:</u>	<u>%Wt/wt</u>
Plantaren 2000	15.0
Standapol EA-2	15.0
Velvetex BK-35	12.5
Nutrilan I	1.5
Citric Acid	to pH 6.0-6.5
Fragrance	q.s.
Water, preservative	Balance

Procedure:

Charge kettle with water; while stirring, add the remaining ingredients in the order listed. Adjust viscosity with sodium chloride.

NOTE: Gel-like viscosities can be obtained via use of thickeners, such as PEG-150 Distearate.

Comments: This is a very high quality shampoo that combines very low irritation with excellent foam characteristics, while leaving the hair in a very manageable condition.

Formula H-4999

Low Irritation Conditioning Shampoo

<u>Ingredients:</u>	<u>%Wt/wt</u>
Plantaren 2000	12.0
Standapol ES-2	24.0
Standamid KD	3.0
Cetiol HE	1.5
Cosmedia Guar C-261	0.75
Euperlan PK-810	4.0
Citric Acid	to pH 6.5
Fragrance	q.s.
Water, preservative	Balance

Procedure:

Charge kettle with water; while stirring, add the first three ingredients in the order listed. Pre-slurry the Cosmedia Guar C-261 and Cetiol HE, and add to the batch followed by the Euperlan PK-810. Adjust pH with citric acid and viscosity with sodium chloride or other viscosifiers.

Comments: By taking advantage of the ability of Plantaren 2000 to enhance cationic polymer deposition, a mild 2 in 1 shampoo is created.

Formula H-5001

SOURCE: Henkel Corp./Emery Group: Plantaren Suggested Formulations

Low-Cost Shampoo

An economical formulation with a cold-mix procedure which provides very good performance.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Deionized Water	64.12
Hydroxypropyl Methylcellulose/Methocel 40-100	0.08
Triethanolamine	0.04
Na4EDTA	0.16
Cocamidopropyl Hydroxysultaine/Mafo CSB-50	6.00
Ammonium Lauryl Sulfate/Rhodapon L-22	14.40
Sodium Laureth Sulfate, 60%/Rhodapon 201-10	10.80
Cocamide DEA/Mazamide JT-128	3.00
Linoleamide DEA/Mazamide SS-10	0.60
Fragrance	0.10
Preservative/Germaben II	0.70
Citric Acid	Q.S.
Sodium Chloride	Q.S.

pH: 6.0-6.5

Viscosity: 3,500-4,500 cps (Brookfield #2 @ 6rpm)

Appearance: Pale, straw-colored clear liquid

Procedure:

Disperse hydroxypropyl methylcellulose into stirring water; then add triethanolamine to initiate hydration. Add Na4EDTA and let mix 15-20 minutes. Add the Mafo CSB-50 followed by the ammonium lauryl sulfate. When uniform, add the sodium laureth sulfate and mix until gel-free. Add premixed Mazamide JT-128 and Mazamide SS-10, optionally with the fragrance. Add preservative and adjust pH and viscosity as needed.

Formulation A-105

Conditioning Shampoo

This formula can function as a conditioning shampoo for a medicated or dandruff shampoo. It exhibits a creamy, compact soap-type foam, excellent rinsing, good conditioning properties, and mildness. The viscosity of the product is about 1,000 cps.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Sodium C12-C15 Parath-3 Sulfonate/Avanel S-30	40.0
Cocamidopropyl Betaine/Mafo CAB	10.0
Lauramine Oxide/Mazox LDA	10.0
Lauramide DEA	4.0
Methyl Paraben	0.25
Citric Acid	to pH 7.0
Perfume & Color	As desired
Deionized Water	Q.S. to 100.0

Procedure:

Heat Lauramide DEA to 40C. Add to rest of ingredients at 40C. Cool to 35C then add perfume and color. Cool to room temperature.

Formulation A-26

SOURCE: PPG Industries, Inc.: Suggested Formulations

Mild Shampoo with Panthenol

This luxury shampoo with a high level of Panthenol delivers high shine and conditioning to the hair. Sandopan LS-24 is a mild, multi-functional surfactant that acts as a hydrotrope in this formulation to prevent latent clouding.

<u>Ingredients:</u>	<u>Wt%</u>
Sodium Myreth Sulfate	5.00
Cocoamidopropyl Betaine	9.20
Lauramide DEA	3.00
Sandopan LS-24 (Sodium Laureth-13 Carboxylate)	0.50
PEG 150 Distearate	0.50
Deionized Water	77.30
Dow Corning 193 (Dimethicone Copolyol)	1.00
D-Panthenol	2.50
Germaben II (Preservative)	1.00

Procedure:

Charge first four ingredients to vessel. Heat to 55C with stirring. Add water and cool to 45C while mixing. Add remaining ingredients. Adjust pH to 6.0 with citric acid.

Properties:

Appearance: Clear Yellow Liquid	pH: 5.75-6.25
% Solids: 17.4	Shake foam: 475/16.2
Viscosity: 2,800-3,200 cps	
Technical Bulletin CHS-27/REF.: CH9-233-03R	

Clear Mink Oil Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
Sandopan DTC acid (Trideceth-7 Carboxylic Acid)	19.00
Oil of Mink (AAA Refined)	1.00
Standapol A (Ammonium Lauryl Sulfate)	16.50
Myrj 52S (PEG-40 Stearate)	5.00
Deionized Water	qs
Fragrance	qs
Potassium Hydroxide	qs

Procedure:

Combine Sandopan DTC acid and the water while mixing. Neutralize to pH=5.5 with Potassium Hydroxide. Heat to 80C and add other ingredients in order with mixing.

Properties:

Appearance: Clear Homogeneous Liquid
pH: 5.5-6.0
Viscosity: 1,300-1,400 cps
Ross-Miles Foam Height: 185 mm/80 mm
Formula CHS-06/REF: CL29-37

SOURCE: Clariant Corp.: Suggested Formulations

Neutralizing Conditioning Ethnic Shampoo

This is a clear, neutralizing shampoo for use in combination with a Creme Relaxer. Its low pH neutralizes the effect of the Creme Relaxer. Sandopan DTC acid, used as the secondary surfactant, contributes to the mildness of the surfactant system.

<u>Ingredients:</u>	<u>Wt%</u>
Water	77.5
Ammonium Lauryl Ether Sulfate (28%)	13.9
Lauramide DEA	2.8
Sandopan DTC acid	3.3
Cartaretin F-4	1.0
Sodium Chloride	1.0
Ucare Polymer JR-400	0.5
Dye, Fragrance	qs

Procedure:

Heat the water to 50C and sprinkle in the Polymer JR-400 while stirring. When the Polymer JR-400 is completely in solution, remove heat, add remaining ingredients, stirring after each addition and adjust the pH to 5-5.5 with citric acid.

Properties:

Appearance: Clear Yellow Liquid
 pH: 5-5.5
 Viscosity: 600-800 cps
 Ross-Miles Foam Height: 120mm/120mm
 REF: CL9-61-01: CHS-01

Mild Anti-Dandruff Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
Standapol ES-50	21.00
Sandopan DTC acid	5.00
Lauramide DEA	4.20
Zinc Omadine (48%)	3.12
Emerest 2355	1.75
Sodium Chloride	1.50
Deionized Water	63.43
Fragrance, Color	qs

Procedure:

Add the ingredients in order to the water. Mix thoroughly after each addition. Slight warming may aid in mixing. Melt the Emerest 2355 prior to addition. Mix thoroughly and allow to cool to room temperature. Sodium Chloride may be used to adjust the viscosity.

Properties:

Appearance: Opaque liquid
 REF: CL2-235: CHS-22

SOURCE: Clariant Corp.: Suggested Formulations

Pearled Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
Water	35.25
Ammonium Laureth (2) Sulfate (25%)	30.00
Ammonium Lauryl Sulfate (28%)	20.00
Monateric 949J	10.00
Cetyltrimonium Chloride	0.75
Cerasynt IP	1.00
Monasil PLN	3.00

Procedure:

Blend ingredients, heat to 65-70C. Stir, cool to 30-35C. Adjust pH to 6.0-6.5 with 50% citric acid. Add color, fragrance and preservative as required then package.

Physical Properties:

Appearance: Pearled Viscous Liquid

Viscosity: Approximately 11,000 cp

Formulation F-727

Clear Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
Water	19.8
Ammonium Laureth (1) Sulfate (26%)	57.7
Monafax MAP-230	12.5
Monateric 949J	8.0
Phospholipid PTC	2.0

Procedure:

Blend in order listed. Adjust pH to 6.5 to 7.0 with 50% citric acid. Add fragrance, color, preservative, and package.

Appearance: Clear viscous liquid

Viscosity: 10,800 cP

Solids: 24%

Formulation F-709

Clear Gel Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
Water	19.8
Ammonium Laureth (1) Sulfate (26%)	57.7
Monafax MAP-230	12.5
Monateric CAB-LC	8.0
Phospholipid PTC	2.0

Procedure:

Blend in order listed. Adjust pH to 6.5 to 7.0 with 50% citric acid. Add fragrance, color, preservative, and package.

Appearance: Clear viscous liquid

Viscosity: 26,000 cP

Solids: 24%

Formulation F-710

SOURCE: Mona Industries, Inc.: Suggested Formulations

Pearlized Conditioning Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
A) Sodium Laureth Sulfate (1) (28.5% active)	35.0
Arlatone MAP Concentrate (2)	2.5
Lauramide DEA (3)	2.0
B) Polyquaternium-10 (4)	0.5
Glycol Distearate (5)	1.0
Water	q.s.
C) Sodium Chloride	2.0
D) 50% Potassium Hydroxide	q.s. to pH 6.5
E) Germaben II	q.s.

Preparation:

- *Heat water to 75-80C, disperse (B) with fast stirring.
- *Add (A) to (B) with moderate stirring.
- *Add (C) to cooling (A)/(B) mixture.
- *Adjust pH with (D).
- *Add (E) below 40C and continue to gently stir to room temperature.

Features:

- *Conditioning after feel
- *Excellent cleansing
- *Minimal irritation

- (1) Steol CS-330 (Stepan), (2) C9-15 Alkyl Phosphate, (3) Monamid 1034 (Mona), (4) Celquat SC-240 (National Starch), (5) Kessco EGDS (Stepan).

Formula CP1232

Clear Conditioning Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
A) Ammonium Lauryl Sulfate (1) (28.0% active)	28.5
Lauramide DEA (2)	3.0
Arlatone MAP Concentrate (3)	2.5
Water	q.s.
B) Cetrimonium Chloride (4) (30.0% active)	1.6
C) 50% Potassium Hydroxide	q.s. to pH 6.5
D) Dowicil 200 (5)	

Preparation:

- *Stir (A), at room temperature, until the mixture is uniform.
- *Add (B) to (A) with moderate stirring.
- *Adjust the pH with (C).
- *Add (D).

Features:

- *Clear formulation with cetrimonium chloride
- *Conditioning after feel
- *Excellent cleansing

- (1) Stepanol AM (Stepan), (2) Monamid 1034 (Mona), (3) C9-15 Alkyl Phosphate, (4) Ammonyx CETAC-30, (5) Dowicil 200 (Dow Chemical).

Formula CP1230

SOURCE: ICI Surfactants: Suggested Formulations

Salon-Style Shampoo

This viscous formulation develops a dense, rich, silky lather which rinses easily.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	41.0
	Hydroxypropyl Methylcellulose/Methocel 40-100	0.2
	Polyquaternium-10/Polymer JR-125	0.1
B	Triethanolamine	0.1
C	Cocamidopropyl Betaine/Mafo CAB	5.5
	Ammonium Lauryl Sulfate/Rhodapon L-22	45.0
	Tetrasodium EDTA	0.2
	Methyl Paraben	0.2
	Imidazolidinyl Urea/Germall 115	0.2
D	Soluble Animal Keratin/Kerasol	0.4
	Cocamidopropyl Amine Oxide/Mazox CAPA	5.5
	Cocamide DEA/Mazamide JT-128	1.0
	Fragrance	0.3
E	Citric Acid	0.2

pH: 6.0-6.5

Viscosity: 12,000-13,000 cps (Brookfield #3 @ 6 rpm)

Appearance: Clear, viscous, very pale straw-colored liquid

Mix the part A ingredients until thoroughly dispersed, then add the triethanolamine to initiate hydration. Allow to stir until completely hydrated, then add the part C ingredients one at a time. Premix the part D ingredients, and add to the main batch. This premix will not be clear, but it does facilitate the solubilization of the fragrance in the product. Adjust the pH with citric acid.

Baby Shampoo

This is a clear, fluid shampoo designed for mildness, gentle cleaning, and good rinseability.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	32.0
	PEG-80 Sorbitan Laurate/T-Maz 28	6.8
	Sodium Trideceth Sulfate/Liposurf EST-30	14.0
	PEG-150 Distearate/Mapeg 6000 DS	2.6
	Sodium C12-C15 Pareth-15 Sulfonate/Avane1 S-150 CGN	1.5
B	Deionized Water	34.0
	Cocamidopropyl Hydroxysultaine/Mafo CSB-50	4.8
	Cocamidopropyl Betaine/Mafo CAB	4.0
	Fragrance	0.1
	Quaternium-15/Dowicil 200	0.1
	Citric Acid	0.1

Viscosity: 800-1500 cps (Brookfield #2 @ 12 rpm)

Appearance: Clear, straw-colored liquid

Blend the Part A ingredients in the main vessel, heating to 70C to dissolve the Mapeg 6000 DS. When uniform, begin cooling and add the part B ingredients in order. Optionally, the fragrance can be premixed with the Mafo CAB in a small container. The premix will not be clear, but it will speed up the dissolution of the fragrance in the shampoo. The container can be rinsed with a small amount of withheld water, into which the quaternium-15 can be dissolved.

SOURCE: PPG Industries, Inc.: Formulations A-106 & A-110

Shampoo

<u>Raw Materials:</u>	<u>Wt%</u>
A: Acylglutamate CS-22	60.0
Cocamide DEA	5.0
Ajidev N-50	1.0
Sodium benzoate	0.2
Methyl paraben	0.2
Water	balance
B: Guar hydroxypropyl trimonium chloride	0.7
Butylene glycol	5.0
C: Fragrance	q.s.

Procedure:

Disperse (B) at room temperature with stirring. Mix (A) and (B) and dissolve at 70-80C with stirring. Cool down to 50C. Add (C), then cool to room temperature.

pH: 6.8

Viscosity: 1700 mPa.s at 25C

Formula CSH-12-13J

Shampoo

<u>Raw Materials:</u>	<u>Wt%</u>
A: Acylglutamate CS-22	40.0
Sodium laureth sulfate (25%)	20.0
Cocamide DEA	5.0
Ajidev N-50	1.0
Sodium benzoate	0.2
Methyl paraben	0.2
Water	balance
B: Guar hydroxypropyltrimonium chloride	0.7
Butylene glycol	5.0
C: Fragrance	q.s.

Procedure:

Disperse (B) at room temperature with stirring. Mix (A) and (B) and dissolve at 70-80C with stirring. Cool down to 50C. Add (C), then cool to room temperature.

pH: 6.6

Viscosity: 1530 mPa.s at 25C

Formula CL-21-13J

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Shampoo

<u>Raw Materials:</u>	<u>Wt%</u>
A: Acylglutamate CK-11	15.0
Cocamide DEA	3.0
Polyquaternium-7 (8% aq.)	3.0
KOH	1.0
Methylparaben	0.2
Water	balance

B: Hydroxypropyl cellulose 1.0

pH: 6.6

Viscosity 1050 mPa.s (25C)

Procedure:

Dissolve (A) ingredients at 70-80C. Add (B) with stirring to (A) and cool down immediately. Cool to 30C.

Formula CK-H-002

Shampoo

<u>Raw Materials:</u>	<u>Wt%</u>
A: Acylglutamate CK-11	15.0
Ajidev N-50	2.0
Pyroter CPI-40	0.5
Polyquaternium-7 (8% aq.)	4.0
KOH	1.0
Methylparaben	0.2
Water	balance

B: Hydroxypropyl cellulose 1.0

pH: 6.6

Viscosity: 940 mPa.s (25C)

Procedure:

Dissolve (A) ingredients at 70-80C. Add (B) with stirring to (A) and cool down immediately. Cool to 30C.

Formula CK-H-003

SOURCE: Ajinomoto U.S.A., Inc.: Acylglutamate CK-11 Formulations

Shampoo with Evening Primrose Oil

<u>Raw Materials:</u>	<u>Wt%</u>
A: Ampholyt JB 130K (Cocamidopropyl Betaine)	20.00
Serdolamide PPF 67 (Cocamide DEA)	3.00
Setacin 103 (Disodium Laureth Sulfosuccinate)	20.00
Antil 141 Liquid (Propylene Glycol (and) PEG-55 Propylene Glycol Oleate)	4.00
B: Softigen 767 (PEG-6 Caprylic/Capric Glycerides)	10.00
Evening Primrose Oil	2.00
Cremophor EL (PEG-35 Castor Oil)	6.00
C: Water up to	100.00
Preservative	q.s.
D: Fragrance	q.s.

Preparation:

(A) and (C) are mixed and heated to 40C. (B) is also mixed, and (A) and (C) are slowly mixed into (B). (D) is stirred in at about 30C.

SOURCE: Huls America, Inc.: Formula 6.3AR

Shampoo

<u>Raw Materials:</u>	<u>Wt%</u>
A: Acylglutamate CK-11	15.0
Sodium laureth-3 sulfate (25%)	5.0
Cocamide DEA	3.0
Polyquaternium-7 (8% aq.)	5.0
Ajidew N-50	2.0
KOH	1.0
Methyl paraben	0.2
Perfume	0.2
Water	balance
B: Hydroxypropyl cellulose	0.8

pH: 6.6

Viscosity 400 mPa.s (25C)

Procedure:

Dissolve (A) ingredients at 70-80C. Add (B) with stirring to (A) and cool down immediately. Cool to 30C.

SOURCE: Ajinomoto U.S.A., Inc.: Formula CK-H-004

Temporary Color-In Shampoo

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Water	36.40
Tetrasodium EDTA	0.05
Cocamidopropyl Betaine (Tego Betaine E)	7.00
Lauryl Glucoside (Tego Glucosid 1216)	6.50
Propylene Glycol	1.25
PEG-18 Glyceryl Oleate Cocoate (Antil 171)	2.00
Cocamidopropylamine Oxide (Aminoxid WS 35)	5.00
Quaternium-80 (Abil Quat 3272)	0.30
Disodium Cocoamphodipropionate	18.00
Phase B:	
PEG-7 Glyceryl Cocoate (Tegosoft GC)	2.50
Basic Blue 99)	
Basic Brown 16)	
Acid Violet 43) Blended as needed for color	1.00
Basic Red 76)	
Basic Yellow 57)	
Water)	
Phase C:	
Fragrance	Q.S.
Preservatives	Q.S.
Phase D:	
Citric Acid 25% Solution	to pH 6.5

Procedure:

1. Heat the water of Phase A to 50C. Add the remaining ingredients of Phase A in order, mixing between additions.
2. Combine the ingredients of Phase B. Mix until uniform.
3. Combine the ingredients of Phase C. Mix. Heat to 50C.
4. Add Phase B to Phase C. Mix well.
5. Add Phase B/C to Phase A. Mix.
6. Cool to 40C. Adjust pH and fragrance.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulation

Two In One Conditioning Shampoo

No.	Phase:	Ingredient:	Wt%
1	A	Deionized Water	34.39
2	A	Jaguar C13S	0.40
3	A	Standapol A	30.00
4	A	Standapol EA-1	20.00
5	A	Standamox	2.00
6	A	Ninol 2012 Extra	2.50
7	A	Polysynlane	0.50
8	A	Nutralin I	4.00
9	A	Ethylene Glycol Distearate	1.75
10	B	Kathon CG	0.05
11	C	D&C Green #8 (1%)	0.40
12	D	FD&C Yellow #5 (1%)	0.10
13	E	FD&C Blue #1 (0.1%)	0.10
14	F	Citric Acid (20%) qs pH: 6.0-6.5	0.22
15	G	Sodium Chloride (20%) QS	3.04
16	H	Silk Powder	0.30
17	I	Fragrance Novarome NC-46	0.25

Manufacturing Instructions:

Heat Phase A to 75C. Cool to 45C and add remaining phases.
Package.

Lab Control:

pH: 6.5

Viscosity: 3800 cps

Brookfield RVT: #4 @ 20 RPM

This high performance shampoo utilizes Polysynlane to provide refatting and Silk Powder to enhance the appearance of the shampoo and add to the conditioning. There are numerous patents using silicone as a conditioning agent/refatting material. Polysynlane circumvents these patents.

SOURCE: Polyester Corp.: Suggested Formulation

Two-In-One Shampoo

Diaformer Z-W provides conditioning on the hair resulting in improved combability, and manageability. Sandopan DTC acid is a multi-functional surfactant which enhances deposition of the conditioning agent and contributes to the mildness of the surfactant system. This crystal clear, water white shampoo has good viscosity and foaming characteristics.

<u>Ingredients:</u>	<u>Wt%</u>
Deionized Water	53.94
Sodium Lauryl Ether Sulfate	33.00
Sandopan DTC acid	8.06
PEG-120 Methyl Glucose Dioleate	3.00
Diaformer Z-W	1.00
Disodium EDTA	0.10
Preservative and Fragrance	qs

Procedure:

Add Sandopan DTC acid to water with mixing. Using 25% NaOH solution, neutralize to pH=6.0. Heat to 80C while stirring. Add PEG-120 Methyl Glucose Dioleate and mix until dissolved. Add Sodium Lauryl Ether Sulfate with mixing. Cool to 40C while stirring. Add Diaformer Z-W and Disodium EDTA one at a time with mixing. Adjust pH=6.0. Add preservative and fragrance while mixing well.

Properties:

pH: 6.0

Viscosity: 2500-2700 cps

Appearance: Clear, water white liquid

REF: CL24-102: CHS-50

All in One Shampoo/Conditioner

In this crystal clear shampoo and conditioner in one, Diaform-Z-W conditions, improves combability, and is an excellent anti-static agent. Sandopan LS-24 complexes with the Diaformer Z-W and enhances deposition of this conditioning agent on the hair.

<u>Ingredients:</u>	<u>Wt%</u>
<u>Phase A:</u>	
Deionized Water	65.85
Monamid 716	2.40
PEG-120 Methyl Glucose Dioleate	0.80
<u>Phase B:</u>	
Sodium Lauryl Ether Sulfate	15.00
Monatonic CAB	6.00
Sandopan LS-24 gel	8.00
<u>Phase C:</u>	
Diaformer Z-W	0.50
Preservative and Fragrance	qs

Procedure:

Heat water to 80C, add remaining ingredients in Phase A with mixing. Add Phase B ingredients in order with mixing. Cool to 40C. Add Phase C ingredients one at a time with mixing until homogeneous. Adjust pH=5.0. Let cool and package.

Properties:

pH: 5.0

Appearance: Crystal clear liquid

REF: CL24-67: CHS-49

SOURCE: Clariant Corp.; Suggested Formulations

Ultra Mild Conditioning Shampoo with Suspended Mica

This ultra mild shampoo uses naturally derived surfactants and cationic conditioning agents which produce a very rich, creamy, luxurious foam and leaves the hair conditioned and full of body.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
1. Deionized Water	56.65
2. Acrylates/C10-30 Alkyl Acrylate Crosspolymer/ Carbopol ETD 2020	0.75
3. Triethanolamine (99%)	0.35
4. Sodium Laureth Sulfate (3 mole, 30%)/Standapol ES-3	14.00
5. Decyl Polyglucose (50%)/Plantaren 2000	12.00
6. Cocoamphoacetate (32%)/Miranol Ultra	6.50
7. Tetrasodium EDTA	0.20
8. Lauryl Methyl Gluceth-10 Hydroxypropyldimonium Chloride/Glucquat 125	3.00
9. Ricinoleamidopropyl-trimonium Chloride/Surfactol Q1	0.60
10. Dimethicone Copolyol/Dow Corning Q2-5324 Fluid	0.45
11. Disodium Laureth Sulfosuccinate/Mackanate EL	2.00
12. Polymethoxy Bicyclic Oxazolidine/Nuosept C	0.20
13. Soyamide DEA/Schercomid SLS	1.20
14. Fruity Floral Fragrance/Fragrance #A42017	0.50
15. Mica and Titanium Dioxide/Timiron MP-149	0.10
16. D&C Green No. 5 (0.10%)	1.50

Properties:

Color, odor, appearance: Aqua, pearlescent viscous liquid
with fruity floral odor

pH: 6.3-6.6

Viscosity (cP) at 25C: 7,000-9,000

Brookfield Yield Value: 130

Preparation Procedure:

1. Disperse Carbopol ETD 2020 polymer in deionized water. Reduce mixing speed after polymer is dispersed. Hold out 1.0% water for step number 5.
2. Neutralize batch with given amount of TEA, mix until no lumps are present.
3. Add sodium laureth sulfate, mix until uniform.
4. Add decyl polyglucose, mix until uniform.
5. Add ingredients 6-16 in order with mild agitation, mix until uniform. NOTE: Pre-mix Timiron with 1.0% water before adding to batch. Mix until uniform.

SOURCE: B.F. Goodrich Co.: Formulation C0060

Section IX

Shaving Products

Aerosol Shave Cream

A wide range of emollients, moisturizers and foam stabilizers can be added to improve the esthetic properties of a basic shave cream formula. In formula SK-17, Arlamol F PPG-11 Stearyl Ether improves razor glide and adds emollience to the formula. Surfactants like Brij 98 Oleth-20 improve the density and stability of the foam without contributing to skin irritation. Sorbitol Solution, USP acts as a humectant to hold moisture on the face and keep the lather from drying out during the shave.

<u>Ingredients:</u>	<u>Wt%</u>
A Stearic acid, triple pressed	9.0
Brij 98	2.0
Arlamol F	2.0
B Water	67.4
Triethanolamine	4.6
Sorbitol Solution, USP	10.0
C Preservative	q.s.
D Hydrocarbon Propellant A-46	5.0

Preparation:

Heat (A) to 75C. Add (B) to (A) slowly with agitation while maintaining temperature at 70-75C. After 15 minutes at this temperature, cool. Add (C) about 50C. Replace water lost by evaporation. Package in aerosol containers. Pressurize with (D). Formula SK-17

Formula SK-18 offers an alternative to the soap type product. The product is nonionic and could be prepared at a neutral or acidic pH. Benefits offered by this formula include low irritation, better rinsability and compatibility with a wide range of other ingredients. The foam, itself, is rich and dense.

Nonionic Aerosol Shave Cream

This is a dense, rich, economical foam with a pH that can be varied over a wide range.

<u>Ingredients:</u>	<u>Wt%</u>
A Cetyl alcohol	4.30
Brij 721	2.20
B Water, deionized	93.25
Sorbic Acid	0.17
C Fragrance	0.08

Preparation:

Heat (A) to 70C and (B) to 75C. Add (B) to (A) slowly with good agitation. Add (C) at 35C. Adjust pH to 5.5 with dilute NaOH. Add water to compensate for evaporation. Continue agitation until viscosity is low enough to pour.

Pressurized: Above concentrate: 160.0g

 Difluoroethane: 5.0g

Formula SK-18

SOURCE: ICI Surfactants: Suggested Formulations

After Shave Conditioner**Formulating Design and Advantages:**

This multi-phase emulsion (O/W/A) is very stable and has wonderful skin feel. Besides the previously mentioned advantages, Cera Bellina produces a product with good viscosity characteristics in product of low solid content.

<u>Raw Materials:</u>	<u>Wt%</u>
Oil Phase:	
Minosil	7.5
Cera Bellina (Pg-3 Beeswax)	4.0
Glycerol Monostearate	3.3
Amerchol L-101	2.0
Vitamin E	0.5
Propyl Paraben	0.1
Water Phase:	
Water (distilled)	64.0
Butylene Glycol	5.0
Glycerol	1.0
Methyl Paraben	0.3
Triethanolamine	1.0
Alcohol Phase:	
SDA-30	10.0
Benzocaine	1.0
Carboxy Methyl Cellulose	0.3

Procedure:

Combine components of the wax phase in a vessel, melt and mix, maintaining a temperature of 75C. Heat the water phase to 75C in a separate vessel making sure the components are all dissolved. Slowly add the oil phase to the water phase under low shear. Cool to 35 to 40C and then add the alcohol phase under low shear. This will ensure that the friction will not increase the temperature which will evaporate the alcohol.

Adaptation of Formula and its Influence on the Product:

Alterations in component concentrations can be achieved by the addition of secondary emulsifying agents. This will allow for active ingredients to be added at the same time as maintaining the stability and rheological properties.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Aftershave Gel with Peppermint and Tea Tree Oil

This clear aftershave gel, thickened with Carbopol Ultrez 10, contains Tea Tree and Peppermint Oil and will help soothe and cool post-razor skin burn. Tea Tree Oil is known for its healing and therapeutic properties.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
Deionized Water	84.23
Carbomer/Carbopol Ultrez 10	0.20
Propylene Glycol	1.50
Sorbitol (70%)/Sorbo 70%	0.50
PEG 600/Carbowax 600	2.00
NaOH (18%)	0.20
Polyquaternium-39/Merquat Plus 3330	0.25
Part B:	
Oleth-10/Brij-97, Volpo-10	0.80
Peppermint Oil, Refined	0.80
Tea Tree Oil/EmCon Tea Tree	0.12
Part C:	
SD 40 Alcohol	10.00
NaOH (18%)	0.12

Properties:

pH: 6.3-6.8
 Viscosity (cP): 7,000-10,000
 Clarity (%T): 90-95
 Appearance: Clear pourable gel
 Stability: Passed 45C, 28 days

Procedure:

1. Disperse Carbopol Ultrez polymer by sprinkling on the surface of warm (30-40C) deionized water. Begin stirring when polymer is wetted.
2. With slow stirring, add propylene glycol, Sorbo and PEG 600 (pre-melted). Stir for 20 minutes.
3. Add NaOH (18%), increase mixing as gel thickens. Mix until smooth.
4. Slow agitation speed and add Polyquaternium-39.
5. Combine Part C ingredients (pre-melt oleth-10). Add Part C to Part A. (NOTE: Part A should be 30C). Mix until uniform.
6. With slow mixing, add SD 40 alcohol and NaOH (18%). Mix until uniform.

SOURCE: B.F. Goodrich Co.: Formulation U0014

Experimental Shaving Cream Preparation

<u>Ingredient:</u>	<u>Amount, g</u>
Deionized water	633.6
Sodium hydroxide (24.6% solution)	9.6
Potassium hydroxide (34.2% solution)	34.2
Stearic acid, double pressed	71.6
Coconut acid	10.0
Propylene glycol	27.0
Lauramide DEA	10.0
Coconut oil	2.5
Tallow glycerides	30.0
Preservative	5.0
1.5% N-Hance 3000 solution	166.5

To prepare the N-Hance 3000 cationic guar solution, add the polymer to the vortex of well-agitated water. Stir 5 minutes. Use acetic acid* to lower pH to 6-7. Stir 30 minutes. Make sure pH is still within the 6-7 range. Add 2.5% sorbitol** (70% active). Stir 30 minutes. Set the resulting solution aside.

To prepare the shaving cream concentrate, add the sodium hydroxide and potassium hydroxide to the deionized water at room temperature. Raise the temperature to 75C. Stir 5 minutes. Pre-melt the stearic acid and coconut acid separately and then add each to the caustic/water mix. Stir 30 minutes and then cool to 55C. Add, one at a time, the propylene glycol, lauramide DEA (melted), coconut oil, tallow glycerides (melted), and preservative. Stir 15 minutes and then turn off the heat. Add the N-Hance solution and cool to room temperature while stirring. (For the control, 166.5 g of deionized water was used in place of the N-Hance solution.)

The concentrate (225g) was weighed into a standard 12-oz shaving cream can. The can was then sealed with a valve assembly using laboratory canning equipment and charged with 9.0 g of propellant.

*Acetic acid is added to speed up the hydration of the N-Hance polymer and reduce solution preparation time to <1 hr.

**Sorbitol is added to prevent borate ion, present in the N-Hance polymer, from complexing with the cationic guar in high-pH (>7) formulations, such as shaving creams. Addition of sorbitol is unnecessary in lower pH formulations.

SOURCE: Aqualon Division, Hercules Inc.: Experimental Formulation

Gel Shave Cream

Gel shave creams are essentially soap-type formulas packaged in a Sepro-Can aerosol container (Continental Can Co.). The gel concentrate contains a low level of propellant. When the gel is expelled from the can, this propellant volatilizes on warm skin surfaces and produces a foam. Nonionic surfactants like Brij 98 Oleth-20 stabilize the foam.

<u>Ingredients:</u>	<u>Wt%</u>
A Palmitic acid	6.50
Stearic acid	2.25
Brij 98	1.00
B Water	34.20
Sorbitol Solution, USP	10.00
C Water	10.00
Triethanolamine	4.75
D Hydroxypropyl cellulose solution (1.0% W/W in water)	7.50
Propylene glycol	3.30
E Carbomer 934 solution (1.5%, W/W in water)	15.00
F Propylene glycol dipelargonate	2.75
n-Butane	0.55
n-Pentane	2.20

Preparation:

Heat (A), (B), and (C) to 60C. Add (B) to (A) with gentle agitation. Add (C) slowly to (AB) with gentle agitation. Add (D) and (E) separately to this soap base and stir until homogeneous. Mix (F) at 5C. All ingredients are transferred to a pressurized vessel and mixed at 7 to 10 psig. This mixture is packaged in a suitable aerosol can. The can is pressurized from the bottom with a mixture of propane and isobutane having a vapor pressure of approximately 46 psig.

Caution: n-Butane and n-Pentane are very flammable!

Formula SK-19

The next formula is designed to provide the shaver who uses an electric razor with a lubricated face which will allow the razor to glide over the skin readily and to prevent "razor burn."

Pre-electric Shave Lotion

<u>Ingredients:</u>	<u>Wt%</u>
Arlamol E pop 15 stearyl ether	10.0-15.0
Alcohol, SDA Formula No. 40	84.6-89.6
Menthol, USP	0.2
Perfume	0.2

Preparation:

Mix ingredients together.

Formula AE-7

SOURCE: ICI Surfactants: Suggested Formulations

Oil-in-Water After-Shave Balm

<u>Ingredients:</u>		<u>Wt%</u>
A	Arlamol S7	10.0
	Babassu oil	5.0
B	Arlatone 2121	5.5
	Atlas G-2330	2.5
	Preservative	q.s.
	Water	71.6
C	Keltrol*	0.2
D	Ethanol	5.0
E	Fombin HC/03*	0.2

Manufacture:

1. Mix the Arlatone 2121 in the heated water phase at 80C under moderate stirring until a homogeneous dispersion is formed.
2. Disperse the hydrocolloid in the heated aqueous phase at 75C with moderate stirring.
3. Add the heated oil phase to the aqueous phase under intensive stirring.
4. Homogenise the mixture intensively at 75C for one minute.
5. Add phases D and E at +-40C.
6. Cool to 35C whilst stirring moderately.
7. Add heat-sensitive ingredients whilst stirring moderately.

Comments:

Viscosity: 6.550 mPa s (Brookfield LVT, spindle C, 6 rpm)

*Keltol (Xanthan Gum, INCI)-Kelco

Fombin HC/03 (Perfluoropolymethylisopropyl Ether, INCI)-Ausimont

SOURCE: ICI Surfactants: Formulation F41-5-15

Shave Cream Concentrate

Rich lather, good razor glide, and won't leave a calcium soap scum in the basin.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Deionized Water	76.9
Carbomer 934/Carbopol 934	0.2
Sodium Cocoyl Isethionate (and) Stearic Acid/ Jordapon CI-60 Flake	12.5
Stearic Acid/Emersol 132	0.8
Coconut Acid/C-108	0.1
Paraffin 6971	1.6
Propylene Glycol	5.0
PEG-75 Lanolin/Solulan 75	0.5
Preservative/Germaben II	0.2
Fragrance	0.2
Triethanolamine	2.0

Procedure:

Disperse and dissolve the carbomer 934 in the water. Add the Jordapon CI-60 Flake, fatty acids and paraffin, heating to 55C (130F) to dissolve. Premix the propylene glycol, PEG-75 lanolin, preservative, and fragrance; add to the batch. Adjust pH to 7.0-7.5 with triethanolamine. Use this concentrate at 96% with 4% Propellant A-46.

Foamulation P-301

Electric Preshave

A hydro-alcoholic splash which lubricates the skin and wets the beard for a faster, more comfortable shave. The formula also works well as a moisturizing aftershave, and as a moisturizing afterbath splash.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
PPG-10 Butanediol/Maccol 57	3.0
Dimethicone Copolyol/Masil 280	0.5
Fragrance	Q.S.
SD Alcohol 40B	25.0
Deionized Water	71.5

Appearance: Clear, water-white fluid

Procedure:

Blend the first three ingredients at ambient temperature. Add the fragrance, and blend until uniform. Add the water, and blend until uniform.

Formulation P-104

SOURCE: PPG Industries, Inc.: Suggested Formulations

Shave Gel**Formulating Design and Advantages:**

The product will raise the hair off the face to make for a closer cut without irritation. The Hexanediol Behenyl Beeswax stabilizes the silicone oil to leave the skin silky and smooth.

<u>Raw Materials:</u>	<u>Wt%</u>
Phase A:	
Hexanediol Behenyl Beeswax	3.0
Deodorized Orange Wax	2.0
Permethyl 104A	3.0
Polybutene	4.0
Isostearic Acid	0.6
Palmitic Acid	1.4
Phase B:	
Purified Water	63.9
Triethanolamine	0.8
Carbopol 940 (2% dispersion)	12.0
Aloe Vera Gel	0.8
Allantoin	0.8
Germaben II	1.0
Phase C:	
Silicone 345	6.7

Procedure:

Heat and mix Phase A and add to a heated and mixed Phase B. Cool to 50C and add Phase C. Cool to 40C and pour.

Adaptation of Formula and its Influence on the Product:

Fragrances, actives and other silicone oils can be incorporated into this type of formula, with only minimal changes in stability and performance.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Section X

Soaps and Hand Cleaners

Antibacterial Handcleaner: Hospital Formulation

<u>Component:</u>	<u>Wt%</u>
Rewoteric AM 2CW	1.4
Witcolate ES-2	4.0
Witcamide 128T	0.5
Witconate AOS-PC	10.0
Triclosan/Propylene Glycol*	0.5
Glycerin (Kemester 99.7%)	2.0
DI Water	81.25
Glydant	0.25
Na4EDTA	0.1

*These two components are blended in a 50:50 blend at least 24 hours before formulating. It makes it easier to incorporate the Triclosan into the formula.

Components are added in the order listed with no heating and continuous mixing.

Adjust pH to about 6.05 using 25% Citric acid solution.

Brookfield RV-DV II #4 @ 10 25C:

800 cps at 4% NaCl

1450 cps at 4.6% NaCl

Formula 1127

Antibacterial Handcleaner: Shop Formulation

<u>Component:</u>	<u>Wt%</u>
Rewoteric AM B-14	2.0
Witcolate ES-2	4.0
Witcamide 128T	2.0
Witconate AOS-PC	10.0
Triclosan/Propylene glycol*	0.5
Glycerin (Kemester 99.7%)	1.0
DI Water	74.15
Glydant	0.25
Na4EDTA	0.1
Witconate 60T	6.0

*These two components are blended in a 50:50 blend at least 24 hours before formulating. It makes it easier to incorporate the Triclosan into the formula.

Components are added in the order listed with no heating and continuous mixing.

Adjust pH to about 6.05 using 25% Citric acid solution.

Brookfield RV-DV II #4 @ 10 25C

920 cps at 2% NaCl

1389 cps at 2.5% NaCl

Formula 1129

SOURCE: Witco Corp.: Suggested Formulations

Antibacterial Handcleaner: Office Formulation

<u>Component:</u>	<u>Wt%</u>
Rewoteric AM 2CW	1.4
Witcolate ES-2	8.0
Witcamide 128T	0.5
Witconate AOS-PC	10.0
Triclosan/Propylene glycol*	0.5

Heat to 70-75C before continuing additions.

Kemester EGDS	1.0
Glycerine (Kemester 99.7%)	2.0
DI Water	40.0

Remove from heat. Additions may continue even before returning to room temp.

DI Water	36.25
Na4EDTA	0.1
Glydant	0.25

*These two components are blended in a 50:50 blend at least 24 hours before formulating. It makes it easier to incorporate the Triclosan into the formula.

Components are added in the order listed with continuous mixing and heating as indicated.

Adjust pH to about 6.05 using 25% Citric acid solution.

Brookfield RV-DV II #4 @ 10 25C

240 cps at 3% NaCl

2740 cps at 4% NaCl

Formula 1128

Waterless Hand Cleaner

<u>Ingredients:</u>	<u>Wt%</u>
Emphos PS-220	8.7
Kerosene, deodorized	37.9
Stoddard Solvent, deodorized	15.4
Triethanolamine, 99%	2.2
Water	35.8

Formula 1119

SOURCE: Witco Corp.: Suggested Formulations

Antibacterial Liquid Soap

A high-foaming liquid soap containing Jordapon ACI-30 to provide excellent lather slip and soft skin afterfeel. An effective antibacterial provides residual benefits.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Ammonium Laureth Sulfate/Alfonic 1412A	9.6
	Triclosan/Irgasan DP-300	0.3
	Cocamidopropyl Amine Oxide/Mazox CAPA	3.5
	Cocamidopropyl Hydroxysultaine/Mafo CSB-50	3.3
	Methyl Paraben	0.2
B	Deionized Water	74.0
	Na4EDTA	0.2
	Imidazolidinyl Urea/Germall 115	0.2
	Ammonium Cocoyl Isethionate/Jordapon ACI-30	7.4
C	Cocamide DEA/Mazamide JT-128	1.3
	Citric Acid to pH=6.5+0.2	Q.S.
	Ammonium Chloride	Q.S.
Viscosity: 2,500-4,000 cps		
Appearance: Clear, straw-colored liquid		

Procedure:

Blend part A ingredients in the main vessel, heating to 45C until uniform. Add the part B components in order, maintaining 45C. When uniform, begin cooling, add part C ingredients.

Formulation N-109

Mild Liquid Soap

This formula lathers and cleans well, yet leaves skin feeling smooth and soft thanks to the Jordapon CI-UP and Mafo CAB ingredients. The white pearlescent appearance is due to the Mapeg EGMS. Omitting this ingredient yields a clear, pale yellow product.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	74.2
	Sodium Cocoyl Isethionate/Jordapon CI-UP	3.0
	Ammonium Lauryl Sulfate/Stepanol AM	13.0
	Glycol Stearate/Mapeg EGMS	0.5
	Na4EDTA	0.1
	Methyl Paraben	0.2
B	Cocamidopropyl Betaine/Mafo CAB	6.0
	Cocamide DEA/Mazamide JT-128	2.5
C	Imidazolidinyl Urea/Germall 115	0.2
	Fragrance	0.2
	Citric Acid	0.1

pH: 6.2-6.8

Viscosity: 2,500-3,500 cps (with 0.6-0.9% NaCl)

Appearance: Creamy, pearlescent liquid

Total Actives: 11.5%

Procedure:

Mix and heat the Part A ingredients to 65C to melt and dissolve the Jordapon CI-UP and the Mapeg EGMS. When uniform, add the Part B ingredients and cool the batch to 40-45C. Add the Germall 115 and fragrance, and adjust the pH. Cool the batch to 25C and adjust the viscosity with sodium chloride.

Formulation N-201

SOURCE: PPG Industries, Inc.: Suggested Formulations

Antimicrobial Liquid Soap

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
H ₂ O, Deionized	56.03
Bioterge AS-40	17.00
Standapol A	12.00
Hetaine CLA (Canolamidopropyl Betaine)	4.25
Hest EGDS (EGDS)	0.80
Hetamide RC (Cocamide DEA)	3.00
Merquat 550	3.10
Phase B:	
Propylene Glycol	2.50
Triclosan	0.50
Phase C:	
Kathon CG	0.05
Phase D:	
Citric Acid	0.07
Sodium Chloride	0.70

Specifications:

pH: 5.75-6.50

Viscosity #3/12: 6000 cps

1. In a stainless steel kettle, combine Phase A. Heat to 75C while mixing.
2. Premix Phase B, add to batch. Mix well.
3. Cool to 40C and add Kathon CG.
4. Adjust pH with citric acid.
5. Cool to 25C and adjust to desired viscosity with sodium chloride.

Formulation HLS-94-132

Liquid Soap

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
H ₂ O, Deionized	59.01
Bioterge AS-40	17.00
Standapol A	12.00
Hetaine CLA (Canolamidopropyl Betaine)	4.25
Hest EGDS (EGDS)	0.80
Hetamide RC (Cocamide DEA)	3.00
Merquat 550	3.10
Phase B:	
Kathon CG	0.07
Phase C:	
Citric Acid	0.07
Sodium Chloride	0.70

Specifications:

pH: 5.75-6.50

Viscosity #3/12: 5000 cps

1. In a stainless steel kettle combine Phase A. Heat to 75C while mixing.
2. Cool to 40C and add Kathon CG.
3. Adjust pH with citric acid.
4. Cool to 25C and adjust to desired viscosity with sodium chloride.

Formula HS 93-86

SOURCE: Heterene, Inc.: Suggested Formulations

Application for Soaps and Syndet Bars

Acylglutamate can be used for soap and syndet bar applications with advantages such as:

- *high eco-compatibility = good biodegradation
- *least irritation to skin and eyes
- *hypo-allergic
- *moisturized feeling after wash
- *Excellent properties even in hard water
- *prevention of scum

Syndet Bar

<u>Raw Materials:</u>	<u>Wt%</u>
Acylglutamate GS-11	83.9
Cetyl alcohol	7.0
Water	9.0
Titanium oxide	0.1
Perfume	q.s.
Syndet bar with weakly acidic pH	

Syndet Bar

<u>Raw Materials:</u>	<u>Wt%</u>
Acylglutamate GS-11	57.0
Sodium lauryl sulfate	24.0
Cetyl alcohol	9.0
Water	10.0
Perfume	q.s.
Pigment	q.s.

Soap

<u>Raw Materials:</u>	<u>Wt%</u>
Soap material (incl. 8% water)	86.0
Acylglutamate HS-21	10.0
Cetyl alcohol	2.2
Ajidew N-50	1.0
Pyroter GPI-25	0.5
Ceresine	0.3
Perfume	q.s.

Transparent Soap

<u>Raw Materials:</u>	<u>Wt%</u>
Soap material (incl. 15% water)	41.6
Acylglutamate HS-21	10.0
Glycerin	7.0
Ethanol	18.0
Sugar	12.0
Water	11.4
Perfume	q.s.

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

Coconut-Soya Hand Soap
(15% Real Soap)

	<u>Wt%</u>
Emery 621 Coconut Fatty Acid (acid value 263)	9.65
Emery 610 Soya Fatty Acid (acid value 202)	3.20
Caustic potash (100%)	3.18
Water	to 100.00

Procedure:

Blend the coconut and soya fatty acids and proceed: Dissolve the caustic in the necessary amount of water, heating to 49-54C (120-130F), then add the fatty acid in a slow steady stream. Agitate while mixing the fatty acid and caustic until saponification is complete. The reaction mixture should be heated to 66-71C (150-160F) during the final stages of saponification.

Check the neutrality of the soap and adjust as necessary. Perfume as desired. Allow the soap to stand and settle for several days at near freezing temperatures, if possible, and decant or filter the soap.

Soya Scrub Soap
(15% Real Soap)

	<u>Wt%</u>
Emery 610 Soya Fatty Acid (acid value 202)	13.20
Caustic potash (100%)	2.69
Water	to 100.00

Procedure:

Prepare in the same way as formulation above.

Properties and Variations:

Scrub soaps are made for general purpose applications and are usually made from the cheaper grades of fatty acids. Cottonseed and soya fatty acids are quite popular raw materials for this type of product, though oleic and other fatty acids may also be used.

Addition of several percent of pine oil will give a pleasant odor to the soap and cause it to congeal slightly. The pine oil should not be added until the soap is fairly cool, since high temperatures cause vaporization and loss. Furthermore, addition of pine oil at or near room temperatures assures better control of viscosity of the finished soap.

SOURCE: Henkel Corp/Emery Group: Fatty Acids and Their Water Soluble Soaps: Suggested Formulations

Cream Soap

<u>Raw Materials:</u>	<u>Wt%</u>
Water	balance
Acylglutamate LS-11	25.0
Glycerin	20.0
Sodium PCA	2.0
Glyceryl stearate	2.0
Cetearyl alcohol	1.0
Sodium chloride	1.0
Fragrance	0.2
Imidazolidinyl urea	0.2
Methyldibromo glutaronitrile & phenoxyethanol	0.1

Cream Soap

<u>Raw Materials:</u>	<u>Wt%</u>
Water	balance
Acylglutamate CT-12	20.0
Propylene glycol	15.0
PEG-20 glyceryl stearate & Glyceryl stearate	6.0
Cetearyl alcohol	3.0
Sodium PCA	1.0
Pyroter GPI-25	1.0
Hydroxyethylcellulose	0.8
Fragrance	0.3
Imidazolidinyl urea	0.2
Methyldibromo glutaronitrile & phenoxyethanol	0.1

Solid Bar

<u>Raw Materials:</u>	<u>Wt%</u>
Sodium N-Cocoyl, Tallow-L-Glutamate (Amisoft GS-11)	42.00
Sodium cocoylisethionate	42.00
Cetyl alcohol	7.00
Titanium dioxide	0.10
EDTA disodium salt	0.10
Deionized water	8.80

Procedure:

1. Dissolve cetyl alcohol and deionized water at 80C with stirring.
2. Add titanium dioxide and EDTA disodium salt and disperse thoroughly.
3. Add small amount of GS-11 (3g per 100g of water) to the mixture to emulsify at 80C, with continued stirring.
4. Add the mixture from step 3 to GS-11 and Sodium cocoylisethionate and mingle thoroughly.
5. Mill the mixture on a roller mill and then convert into a bar through an extruder.
6. Mold the bar in a stamping machine.

Formula AI-KK

SOURCE: Ajinomoto U.S.A., Inc.: Suggested Formulations

D-Limonene Hand Cleaner

An opaque, firm gel waterless hand cleaner based on natural d-limonene and biodegradable emulsifiers. Effective, clean-rinsing, and pleasant-smelling.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	d-Limonene, Grade M	20.00
	Butylated Hydroxy Toluene (BHT)	0.10
	Oleic Acid/Pamolyn 125	7.20
	Cocamide DEA/Mazamide JT-128	1.70
	Polysorbate 80/T-Maz 80	5.00
	PEG-85 Lanolin/Lanogel 65	0.50
B	Triethanolamine	3.10
	Glycerin	1.00
	Deionized Water	61.39
	Na4EDTA	0.01

pH: 8.2-8.5

Odor: Citrus

Appearance: White, opaque gel

Procedure:

No heating is required to process this formula. In a side vessel, dissolve the BHT in the d-Limonene, then blend in the other part A ingredients. In the main vessel, blend the part B ingredients. With rapid propellor mixing, add part A to part B, forming the emulsion. Check and adjust pH, then package. Product is a flowable liquid when made, thickens to a soft cream in about 2 hours, and becomes a ringing gel in about 3 hours.

Formulation O-106

Waterless Hand Cleaner with d-Limonene

A firm white cream for heavy-duty hand cleaning with or without water. The d-limonene aids grease-cutting in addition to fragrancng the product. Mazclean EP provides emulsification and detergency as well as improved rinsability.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deodorized Kerosene	25.00
	Light Mineral Oil/Drakeol 9	5.00
	d-Limonene, Grade M	5.00
	d-Limonene Emulsifier/Mazclean EP	6.00
	Stearic Acid/Hystrene 5016	5.00
B	Water	49.83
	Glycerin	2.00
	Triethanolamine, 99%	2.10
	Preservative/Kathon CG	0.07

pH: 7.5-8.0

Viscosity: 550,000-600,000 cps (Brookfield TD @ 0.3 rpm)

Appearance: Firm, glossy white cream

Procedure:

Blend the Part A ingredients in the main vessel, heat to 60C. In a second vessel, blend and heat the Part B ingredients to 60C. Slowly add Part B to A with good agitation. The batch will thicken as the emulsion forms, then it will thin slightly as the emulsion inverts. Cool the batch to 35C with sweep stirring&pack off.

Formulation O-102

SOURCE: PPG Industries, Inc.: Suggested Formulations

Hand and Body Cleanser

<u>Ingredients:</u>	<u>Wt%</u>
Phase I:	
Water, D.I.	67.0
Witconate AOS	20.0
Varonic LI-48	3.7
Varonic LI-67	1.3
Witconol EGMS	1.6
Varamide ML-1	2.5
Phase II:	
Glycerin	0.2
Lanoquat 50	0.5
EDTA	0.1
Rewoteric AM B-15	3.1
Phase III:	
Citric Acid	q.s.
Phase IV:	
Sodium Chloride	q.s.
Phase V:	
Preservative	q.s.

Blending Procedure:

Heat Phase I water to 80C. Blend in Witconate AOS with good agitation. When this is blended completely, add the remaining Phase I ingredients, melting them first before adding. Cool to 45C and add Phase II, in the order listed. Cool to 35C and adjust pH=7.0 to 7.7 with citric acid. Add sodium chloride to desired viscosity.

Typical Properties:

Solids: 19.5%

pH: 7.3

Formula 1125

Economy Hand Cleaner

<u>Ingredients:</u>	<u>Wt%</u>
Phase I:	
Water, D.I.	64.7
Glycerine	0.5
Witcolate WAC-LA	30.0
Varox 1770	3.5
Glyceryl Stearate	1.3
Phase II:	
Phosphoric Acid, 86%	q.s.
Phase III:	
Sodium Chloride	q.s.
Phase IV:	
Preservative	q.s.

Blending Procedure:

Warm and mix Phase I to 70-75C. Cool to 30C. Adjust to pH=6.8 with Phosphoric Acid. Add sodium chloride to achieve desired viscosity.

Typical Properties:

Solids: 12.0%

pH: 6.8

Formula 1124

SOURCE: Witco Corp.; Suggested Formulations

Heavy Duty Liquid Soap

A high-lathering, hard-working liquid soap which doesn't dry the skin with repeated use because of the Mafo CSB-50, which also helps build the product's viscosity. A pearlescent appearance is imparted by the Mapeg EGMS, which could be omitted if a clear product is desired.

Part:	Ingredient/Trade Name:	Wt%
A	Demineralized Water	20.0
	Sodium C14-15 Olefin Sulfonate/Witconate AOS	10.0
	Glycol Stearate/Mapeg EGMS	1.0
B	Demineralized Water	46.1
	Sodium C12-15 Pareth Sulfate/Neodol 25-3S	10.0
	Cocamidopropyl Hydroxysultaine/Mafo CSB-50	10.0
	Propylene Glycol (and) Diazolidinyl Urea	
	(and) Methyl Paraben (and) Propyl Paraben/ Germaben II	0.5
	Na4EDTA	0.2
C	Cocamide DEA/Mazamide 80	2.0
	Citric Acid (50%)	0.2
	Ammonium Chloride	Q.S.

pH: 6.0-6.5

Viscosity: 300 cps (with 0.0% NH₄Cl)
6,000 cps (with 0.5% NH₄Cl)

Appearance: White, pearlescent liquid

Procedure:

Part A ingredients are mixed and heated to 65C to melt and dissolve the pearl agent. Heating is discontinued, and the Part B ingredients are added in order, with propellor mixing. When the batch is uniform, the pH is adjusted with citric acid and the viscosity with ammonium chloride.

Formulation N-103

Combo Bar

(Modification of an example from US Patent #5,041,233)

Ingredient/Trade Name:	Wt%
Tallow/Coco Soap (85-15)	55.6
Sodium Cocoyl Isethionate (and) Stearic Acid/ Jordapon CI-75	29.3
Water	10.3
Sodium Isethionate/Witconate NIS	2.0
NaCl	0.4
Fragrance	1.0
TiO ₂	1.0
Na3HEEDTA	0.2
BHT	0.2

Procedure:

Blend all ingredients together at room temperature.

Formulation M-104

SOURCE: PPG Industries, Inc.: Suggested Formulations

Hot Pour Syndet Bar

This mild cleansing bar provides rich lather and soft skin as a result of Jordapon CI-60. The formula is designed to be manufactured using hot-fill equipment; no soapmaking lines are needed.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Sodium Cocoyl Isethionate (and) Stearic Acid/ Jordapon CI-60	80.0
Stearyl Alcohol/CO-1895	10.0
PEG-150/Carbowax E-8000	3.0
Triethanolamine, 99%	5.0
Demineralized Water	2.0

pH (5% solution): 6.3

Procedure:

With all ingredients in the vessel, heat to 70C. Begin propellor agitation when the batch becomes fluid. Maintain slow mixing until all solids are dissolved and the batch becomes a uniform, nonviscous, opaque fluid. Fill molds, allow to solidify.

Formulation M102

Syndet Bar

Modification of an example in US Patent #4,707,288

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Sodium Cocoyl Isethionate (and) Stearic Acid/ Jordapon CI-75	76.5
Tallow/Coco Soap	16.7
Water	4.1
NaCl	0.3
TiO ₂	1.0
Fragrance	1.0
BHT	0.2
Na3HEDTA	0.2

Formulation M103

SOURCE: PPG Industries, Inc.: Suggested Formulations

Liquid Soap

A mild, high-foaming formulation which is simple, yet offers lubricious lather and soft skin afterfeel thanks to the Jordapon CI-UP. The Mapeg EGMS provides a bright pearlescence to the system. It can be omitted if a clear product is desired.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	74.4
	Sodium Cocoyl Isethionate/Jordapon CI-UP	3.0
	Ammonium Lauryl Sulfate/Stepanol AM	13.0
	Glycol Stearate/Mapeg EGMS	0.5
	Na4EDTA	0.1
	Methyl Paraben	0.2
B	Cocamidopropyl Betaine/Mafo CAB	6.0
	Cocamide DEA/Mazamide JT-128	2.5
C	Fragrance	0.2
	Citric Acid	0.1

pH: 6.0-6.5

Viscosity: 2500-3500 cps (with 0.6-0.9% NaCl)

Appearance: Creamy, Pearlescent Liquid

Procedure:

Mix and heat the part A ingredients to 65C (150F). When uniform, add the Mafo CAB and the Mazamide JT-128. Cool the batch to 40C (105F), add fragrance and adjust pH. Adjust viscosity with sodium chloride.

SOURCE: PPG Industries, Inc.: Formulation N-201

Liquid Hand Soap

<u>Ingredients:</u>		<u>Wt%</u>
A)	Alpha Olefin Sulfonate (1) (38.5% active)	20.8
	Arlatone MAP Concentrate (2)	4.0
	Laurylamine DEA (3)	2.0
	Polyquaternium-10 (4)	0.5
	Water	q.s.
B)	Sodium Chloride	2.0
C)	50% Potassium Hydroxide	q.s. to pH 6.5
D)	Quaternium-15 (5)	q.s.

Preparation:

- *Disperse polyquaternium-10 in water with fast stirring until homogeneous.
- *Add remainder of (A) with moderate stirring.
- *Add (B) to (A).
- *Adjust the pH with (C).
- *Add (D).

Features:

- *Excellent cleansing
- *Smooth after feel
- *Lubricious lather

- (1) Bio-Terge AS-40 (Stepan), (2) C9-15 Alkyl Phosphate,
 (3) Monamid 1034 (Mona), Celquat SC-240 (National Starch),
 Dowicil 200 (Dow Chemical)

Viscosity: 9,450 cPs (Brookfield LVT, spindle 4, 30 rpm)

Stability: 21.0C (70F): 4 weeks

35.0C (95F): 4 weeks

46.0C (115F): 4 weeks

F/T: 4 freeze/thaw cycles

SOURCE: ICI Surfactants: Formulation CP1228

Liquid Hand Soap

<u>Ingredients:</u>	<u>Wt%</u>
Standapol WAQ Special	16.00
Plantaren 2000	10.00
Velvetex BK-35	3.50
PEG-150 Distearate	2.00
Lantrol AWS 1692	0.30
Emerest 2355	1.00
Cosmedia Polymer HSP-1180	1.00
Kathon CG	0.05
Fragrance & Dyes	q.s.
Water	Balance

Procedure:

Charge kettle with water. Heat water to 60-65C. Keep temperature constant. Add remaining ingredients, one at a time, under agitation. Once uniform, take heat off and continue stirring until product has reached ambient temperature. Adjust pH to 6.0-6.5 with citric acid.

Comments:

By combining Standapol WAQ Special and Plantaren 2000, we are assured of a high foaming liquid hand soap that is mild to the skin. The inclusion of Lantrol 1692 and Cosmedia HSP-1180 leaves an elegant feel on the skin.

Formula H-5003

Coconut-Oleic Hand Soap
(15% Real Soap)

	<u>Wt%</u>
Emery 621 Coconut Fatty Acid (acid value 263)	6.5
Emersol 213 Low Titer Oleic Acid (acid value 203)	6.5
Caustic potash (100%)	3.0
Water	to 100.0

Procedure:

Dissolve the caustic in the necessary amount of water, heating to 49-54C (120-130F), then add the fatty acid in a slow steady stream. Agitate while mixing the fatty acid and caustic until saponification is complete. The reaction mixture should be heated to 66-71C (150-160F) during the final stages of saponification.

Check the neutrality of the soap and adjust as necessary. Perfume as desired. Allow the soap to stand and settle for several days at near freezing temperatures, if possible, and decant or filter the soap.

Properties and Variations:

Distilled pine oil or other perfume may be added. This is a typical formula for soaps used in liquid soap dispensers, and many such products contain fluorescein, a dye that imparts a greenish-yellow fluorescence.

SOURCE: Henkel Corp./Emery Group: Suggested Formulations

Liquid Hand Soap w/Aloe

<u>Ingredients:</u>	<u>Wt%</u>
Phase I:	
Water, D.I.	41.7
Potassium Hydroxide, 87%	1.2
Glycerine	1.0
Phase II:	
Lauric Acid, 97%	5.0
Kemester 5822	0.5
Kemester EGDS	1.2
Phase III:	
Varonic LI-63	1.0
Varonic LI-420	4.0
Rewoteric AM B-15	14.2
Witcolate WAC-LA	26.7
Varox 1770	2.5
Phase IV:	
Aloe Vera	1.0
Phase V:	
Preservative	q.s.

Blending Procedure:

Heat Phase I and Phase II ingredients to 75-80C. With adequate mixing add Phase II to Phase I. Warm Phase III and add to Phase I and Phase II. Mix while cooling to 45C. Add Phase IV. Cool to 30C. Add Phase V.

Typical Properties:

Viscosity, cps: 2000

Solids: 29.0%

Formula 1122

Deodorant Hand Wash

<u>Ingredients:</u>	<u>Wt%</u>
Phase I:	
Water, D.I.	31.6
Witcolate WAC-LA	40.0
Varox 365	8.5
Rewoteric AM DML-35	7.2
Triclosan	0.2
Phase II:	
Varsulf SBFA-30	12.5
Phase III:	
Citric Acid, 25%	q.s.
Phase IV:	
Preservative	q.s.

Blending Procedure:

Add Phase I ingredients in order listed, mixing completely between additions. Add heat enough to melt Triclosan. Add Phase II at 45C. At 35C adjust pH=7.0 with Citric Acid.

Typical Properties:

Solids: 21.9%

pH: 7.0

Formula 1123

SOURCE: Witco Corp.: Suggested Formulations

Luxury Liquid Soap

This clear formula offers excellent flash foaming even in hard water, and provides silky-feeling lather and a soft skin afterfeel, delivered by Jordapon ACI-30. The inherent mildness of the system is enhanced by the addition of Avanel S-150 CG.

Part:	Ingredient/Trade Name:	Wt%
A	Deionized Water	55.5
	Polyquaternium-10/Ucare Polymer JR-125	0.1
	NA4EDTA	0.2
B	Imidazolidinyl Urea/Germall 115	0.2
	Methyl Paraben	0.2
	Sodium C12-15 Pareth-15 Sulfonate/	
	Avanel S-150 CG	4.3
	Cocamidopropyl Betaine/Mafo CAB	12.8
	Ammonium Cocoyl Isethionate/Jordapon ACI-30	23.3
C	Soyamide DEA/Mazamide SS-10	2.0
	Fragrance/Flora 91-2008	0.3
	Citric Acid	0.1
	NH4Cl	1.0

pH: 6.3-6.7

Viscosity: 4000-6000 cps (Brookfield #2@ 3rpm)

Appearance: Clear, straw-colored liquid

Procedure:

Blend Part A ingredients at ambient temperature for about 20 minutes until dissolved. Add the Part B ingredients in order, and mix at ambient temperature until clear and uniform, about 30 minutes. Add the Mazamide SS-10 and the fragrance, mixing until clear. Adjust pH with Citric Acid and viscosity with NH4Cl.

SOURCE: PPG Industries, Inc.: Formulation N-107

Liquid Hand Soap

Ingredients:	Wt%
Phase I:	
Water, D.I.	59.5
Phase II:	
Witconate AOS	30.0
Varamide ML-1	2.2
Rewoteric AM B-15	3.1
Propylene Glycol	0.5
Glyceryl Stearate	2.2
Sodium Chloride	2.5
Phase III:	
Phosphoric Acid, 86%	q.s.
Phase IV:	
Preservative	q.s.

Blending Procedure:

Warm water to 75C. Add Witconate AOS with rapid agitation. Add remaining Phase II ingredients in order. Cool to 30C. Adjust pH=6.8 with Phosphoric Acid.

SOURCE: Witco Corp.: Formulation 1126

Mild Liquid Soap

This clear formula offers excellent flash foaming even in hard water, and provides silky-feeling lather and a soft skin afterfeel, delivered by Jordapon ACI-30 G. The inherent mildness of the system is enhanced by the addition of Avanel S-150 CGN.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	55.4
	Polyquaternium-10/UCare Polymer JR-125	0.1
B	Na4EDTA	0.2
	Imidazolidinyl Urea/Germall 115	0.2
	Methyl Paraben	0.2
	Sodium C12-15 Pareth-15 Sulfonate/Avanel S-150 CGN	4.3
C	Cocamidopropyl Betaine/Mafo CAB	12.8
	Ammonium Cocoyl Isethionate/Jordapon ACI-30 G	23.3
	Soyamide DEA/Mazamide SS-10	2.0
	Fragrance/Flora 91-2008	0.3
	Citric Acid	0.1
	NH4Cl	1.0

pH: 6.3-6.7

Viscosity: 4,000-6,000 cps (Brookfield #2 @ 3 rpm)

Appearance: Clear, straw-colored liquid

Procedure:

Blend Part A ingredients at ambient temperature for about 20 minutes until dissolved. Add the part B ingredients in order, and mix at ambient temperature until clear and uniform, about 30 minutes. Add the Mazamide SS-10 and the fragrance, mixing until clear. Adjust pH with citric acid and viscosity with NH4Cl.

Formulation N-107

Hot-Pour Syndet Bar

This mild cleansing bar provides rich lather and soft skin as a result of Jordapon CI-60 Flake. The formula is designed to be manufactured using hot-fill equipment: no soapmaking lines are needed.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Sodium Cocoyl Isethionate (and) Stearic Acid/Jordapon CI-60 Flake	80.0
Stearyl Alcohol/CO-1895	10.0
PEG-150/Carbowax PEG-8000	3.0
Triethanolamine, 99%	5.0
Demineralized Water	2.0
pH (5% solution):	6.3

Procedure:

With all ingredients in the vessel, heat to 70C. Begin propeller agitation when the batch becomes fluid. Maintain slow mixing until all solids are dissolved and the batch becomes a uniform, nonviscous, opaque fluid. Fill molds, allow to solidify.

Formulation M-102

SOURCE: PPG Industries, Inc.: Suggested Formulations

Opaque Liquid Soap

<u>Ingredients:</u>	<u>Wt%</u>
A. Stearic acid, triple pressed	4.0
Coconut oil fatty acid	8.0
Arlamol E pop 15 stearyl ether	2.0
Ammonium Laureth Sulfate	4.0
PEG 150 distearate	3.0
Zinc stearate	2.0
B. Sodium lauroyl sarcosinate	10.0
Sorbo sorbitol solution (USP)	5.0
Potassium hydroxide (85%)	3.5
Water	44.2
C. Water	14.0
Hydroxypropyl Methylcellulose	0.2
D. Perfume	q.s.
E. Quaternium-15	0.1

Preparation:

Heat (A) to 70C. Heat (B) to 72C. Add (B) to (A) and mix with Homo-mixer. Add (C) (room temperature) to (A,B) at 60C. Add (D) and then (E). Stir to room temperature and add water to replace loss by evaporation.

Properties:

pH: 9.1

Viscosity (R.T.): 240 cps

Foam volume: 840 ml in a modified blender apparatus

Test Panel:

Nine out of ten panelists preferred this formulation to the leading commercial product. The tenth had no preference.

Opaque Liquid Soap

<u>Ingredients:</u>	<u>Wt%</u>
A Tween 20 polysorbate 20	3.0
Ammonium lauryl sulfate	12.0
Ammonium laureth sulfate	12.0
Cocamide DEA	3.0
Arlamol E pop 15 stearyl ether	2.0
Zinc stearate	2.0
PEG 150 distearate	1.5
B Sorbo sorbitol solution, USP	5.0
Water	40.4
C Water	18.7
Hydroxypropyl Methylcellulose	0.3
D Perfume	q.s.
E Quaternium-15	0.1

Preparation:

Heat (A) to 60C and (B) to 65C. Add (B) to (A) and stir to 40C. Heat (C) to 40C and add to (B,A). Add (D). Add (E) and replace water lost by evaporation.

Properties:

pH: 7.1

Viscosity (R.T.): 1,560 cps

Foam Volume: 850 ml in a modified blender apparatus

Formula AE-19

SOURCE: ICI Americas: Suggested Formulations

Opaque Liquid Soap

Natrosol 250HHR hydroxyethylcellulose effectively boosts the viscosity of this lower actives opaque shampoo base. At a surfactant solids level of only 7.3%, the addition of Natrosol yields a rich liquid soap with a viscosity of 4,000 cps (mPas) (Brookfield LVT at 30 rpm, 25C).

Ingredients:

	Wt%
Water	75.88
Sodium C14-C16 olefin sulfonate, 40% active	7.50
Sodium lauroyl sarcosinate, 30% active	6.66
Cocamidopropyl betaine, 35% active	6.66
Glycol stearate	1.00
Natrosol 250HHR CS hydroxyethylcellulose	0.80
Propylene glycol	0.50
Glycerin	0.50
Tetrasodium EDTA	0.30
Stearalkonium chloride	0.10
Methyl paraben	0.10

Procedure:

1. Disperse the Natrosol in water with good agitation. Mix until fully dissolved. Moderate heating or an increase in solution pH to slightly alkaline will accelerate hydration.
2. Disperse the methyl paraben in the propylene glycol. Add to the Natrosol solution. Mix until dissolved.
3. While slowly stirring the water-soluble polymer solution, add the stearylalkonium chloride, olefin sulfonate, and glycol stearate. Heat the mixture to 80C until all of the glycol stearate has melted and the solution has turned opaque.
4. Add the remaining ingredients while cooling the solution slowly to room temperature.
5. Add color and fragrance.

Formula NO9-01W

Transparent Toilet Soap

<u>Ingredients:</u>	Wt%
Water	65.70
Sodium C14-C16 olefin sulfonate, 40% active	20.00
Sodium lauroyl sarcosinate, 30% active	10.00
Cocamide MEA	3.00
Natrosol 250HR CS	1.00
Disodium EDTA	0.20
Methyl paraben	0.10

Procedure:

1. Disperse the Natrosol in water with good agitation. Mix until fully dissolved.
2. Add the methyl paraben to the Natrosol solution. Mix until fully dissolved.
3. In a separate vessel, combine the surfactants, heat to 80C, and mix until homogeneous.
4. Add the surfactant solution to the water-soluble polymer solution and mix until well blended.
5. Add the disodium EDTA and cool to room temperature.

Formula NO9-02W

SOURCE: Aqualon Division, Hercules Inc.: Suggested Formulations

Pearlized Liquid Soap

This system combines important performance attributes - appearance, flash foaming, easy rinsability, and soft afterfeel - with the practical advantages of low cost and efficient processing.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	30.00
	Ammonium Lauryl Sulfate/Stepanol AM	18.50
	Na4EDTA	0.20
	Methyl Paraben	0.20
	Glycol Stearate/Mapeg EGMS	0.50
B	Deionized Water	28.30
	Ammonium Cocoyl Isethionate/Jordapon ACI-30 G	9.20
	Imidazolidinyl Urea/Germall 115	0.20
C	Cocamidopropyl Betaine/Mafo CAB	3.40
	Cocamide DEA/Mazamide JT-128	0.90
	Fragrance	0.05
D	Citric Acid, 50%	0.10
E	Deionized Water	6.75
	Ammonium Chloride	1.70

pH: 6.0-6.5

Viscosity: 1,000 cps (Brookfield #3 @ 6 rpm)

5,000 cps (Brookfield #3 @ 6 rpm with 0.6% NH4Cl)

Appearance: Pearlescent, white liquid

Procedure:

In the main vessel, mix and heat part A to 70C. When uniform, discontinue heating and add the part B ingredients in order, cooling the batch. Premix part C, and add to the batch. Adjust pH when batch temperature is 45-55C. Cool the batch to 25C, and adjust viscosity with part E.

Formulation N-105

Syndet Bar

Modification of an example in US Patent #4,707,288

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Sodium Cocoyl Isethionate (and) Stearic Acid/ Jordapon CI-75	76.5
Tallow/Coco Soap	16.7
Water	4.1
NaCl	0.3
TiO2	1.0
Fragrance	1.0
BHT	0.2
Na3HEEDTA	0.2

Procedure:

Blend all ingredients together at room temperature.

Formulation M-103

SOURCE: PPG Industries, Inc.: Suggested Formulations

Surgical Scrub

This is an opaque lotion formula which is soap-free. Foaming and cleansing is provided by Avel S-35 CG and Mafo CAB, and germ-killing by PCMX. A blend of emollient ingredients soften dry areas.

<u>Part:</u>	<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
A	Deionized Water	46.00
	Hydroxypropyl Methylcellulose/Methocel 40-100	0.10
	Tetrasodium EDTA	0.10
	Triethanolamine	0.05
B	Sodium Octoxynol-2 Ethane Sulfonate/	
	Avel S-35 CG	32.00
	Cocamidopropyl Betaine/Mafo CAB	10.00
	Chloroxyleneol/Phenosept	3.00
C	Petrolatum	5.00
	Lanolin Alcohol	0.50
	Cetearyl Alcohol (and) Ceteareth-20/Macol 124	2.00
	Cocamide DEA/Mazamide 80	1.25
D	Fragrance	Q.S.
	Citric Acid or TEA to pH 6.0-7.0	Q.S.

Procedure:

Disperse the hydroxypropyl methylcellulose in the part A water at ambient temperature by mixing for >10 minutes. Add the tetrasodium EDTA and the TEA to raise the pH above 8.5 and initiate hydration of the hydroxypropyl methylcellulose. Mix for at least 20 minutes while heating the batch to 60-65C. Add the part B ingredients in order, maintaining the batch at 60-65C while the PCMX dissolves. Blend the part C ingredients in a side vessel, heating to 60-65C. Add part C to the batch with rapid agitation to form the emulsion. Maintain this agitation as the batch is cooled to 40-45C. Add the fragrance and adjust the pH to 6.0-7.0.

SOURCE: PPG Industries, Inc.: Formulation N-108

Toilet Soap Base*

	<u>Wt%</u>
Emery 531 Fatty Acid	48.37
Emery 621 Coconut Fatty Acid	12.09
Caustic soda (36%) (40.7 Baume)	26.39
Water	10.08
Salt	0.19
Sodium silicate	1.92
Titanox	0.96
Perfume	q.s.

Floating Soap*

	<u>Wt%</u>
Emery 531 Fatty Acid	43.13
Emery 621 Coconut Fatty Acid	18.48
Caustic soda (36%) (40.7 Baume)	28.98
Water	5.37
Salt	0.19
Sodium silicate	3.85
Perfume	q.s.

*Formulations 1 and 2 require normal bar soap manufacturing procedures; as well as specialized equipment including soap kettles, crutchers, plodders, and cutting and stamping equipment. Formulation 2 requires special processing to float.

Pine Oil Hand Soap
(15% Real Soap)

	<u>Wt%</u>
Emery 621 Coconut Fatty Acid (acid value 263)	12.7
Caustic potash (100%)	3.3
Pine oil (steam distilled)	3.2
Water	to 100.0

Procedure:

Dissolve the caustic in the necessary amount of water, heating to 49-54C (120-130F), then add the fatty acid in a slow steady stream. Agitate while mixing the fatty acid and caustic until saponification is complete. The reaction mixture should be heated to 66-71C (150-160F) during the final stages of saponification. The pine oil is added to the mixture following saponification.

Check the neutrality of the soap and adjust as necessary. Perfume as desired. Allow the soap to stand and settle for several days at near freezing temperatures, if possible, and decant or filter the soap.

SOURCE: Henkel Corp., Emery Group: Fatty Acids and Their Water Soluble Soaps: Suggested Formulations

Ultra-Waterless Hand Cleaner with Abrasive**Formula Profile:**

The synergistic mixture of Veegum Ultra and Rhodigel will create a light waterless hand cleaning lotion that will have great spreadability and feel without the tack and stringiness characteristic of Rhodigel. Veegum Ultra will improve stability, suspend the abrasives and maintain viscosity of the product. The formed soap is Potassium Oleate and the D-Limonene is the natural cleaner.

Ingredients:

	Wt%
A: Water	59.3
Veegum Ultra (Magnesium Aluminum Silicate)	1.5
Rhodigel (Xanthan Gum)	0.5
B: Oleic Acid	9.0
Mineral Oil	5.0
Cetyl Alcohol	1.0
Lanolin	1.0
C: Water	2.0
Potassium Hydroxide	0.7
D: D-Limonene	10.0
E: Polyethylene Beads (A-C 9-A)	10.0
F: Preservative	qs

Procedure:

Step 1: Dry blend Veegum Ultra and Rhodigel in Part A. (Dry blending reduces the clumping of Rhodigel and allows for the simultaneous introduction of ingredients). Sift the powder into an established vortex in the water. Veegum Ultra will be hydrated within 15 minutes. Allow about 45 minutes for Rhodigel to dissolve completely. The addition of any other ingredients during the hydration process will interfere with the hydration of Veegum Ultra and will reduce or even eliminate the desired properties generated by the Magnesium Aluminum Silicate.

Step 2: Begin heating water phase in Step 1 to 75C.

Step 3: Blend oil phase ingredients in Part B and heat the oil phase to 75C.

Step 4: When both phases are at 75C, add oil phase in Step 3 to water phase Step 2.

Step 5: Cool to 45C. Dissolve the KOH in water and add Part C to Step 2.

Step 6: Cool to 35C. Add Part D to Step 2.

Step 7: Add Part E to Step 2.

Step 8: Add Part F to Step 2.

Product Specifications:

Viscosity: Brookfield LVT: 20,000+-3,000 cps after 24 hours

pH: 8.0-8.5

This formula produces a stable product that passes 3 month stability testing at RT, 5C, 38C, 50C and 3 cycle F/T.

SOURCE: R.T. Vanderbilt Co., Inc.: Formula No. 478

Waterless Hand Cleaner Cream

Formula SK-20 is a waterless hand cleaner cream based on deodorized kerosene as the cleansing agent.

<u>Ingredients:</u>		<u>Wt%</u>
A	Magnesium aluminum silicate	2.5
	Water	30.0
B	Arlacel 60 Sorbitan Stearate	2.0
	Tween 60 Polysorbate 60	8.0
	Deodorized kerosene	35.0
C	Methylcellulose, 4000 cps	0.5
	Water	22.0
	Preservative	q.s.

Preparation:

Part (A): Add magnesium aluminum silicate to water slowly, agitating continually until smooth (about one hour). Heat (A) to 62C.

Part (B): Heat (B) to 60C. Add (A) to (B). Stir until cool.

Part (C): Heat half of the water to 90C. Add methylcellulose very slowly. Mix thoroughly to disperse methylcellulose. Add the remainder of the water. Cool and add (C) to the emulsion (A,B blend). Mix well. Replace water lost by evaporation.

Formula SK-20

d-Limonene Hand Cleaner

<u>Ingredients:</u>		<u>Wt%</u>
A	d-Limonene	15.00
	Arlamol E PPG 15 Stearyl ether	15.00
	Brij 35 Liquid Laureth-23	2.30
	Brij 72 Steareth-2	4.35
B	Water	62.75
	Carbopol 934	0.50
D	Dowicil 200	0.10

Preparation:

Disperse Carbopol 934 in water. Heat (A) to 60C and (B) to 62C. Add (B) to (A) slowly with moderate agitation. Add (C) at about 50C. Stir to 35C and replace water lost by evaporation.

Formula SK-21

SOURCE: ICI Surfactants: Suggested Formulations

Section XI

Sun Care Products

Clear Liquid Sunblock

Hard to dissolve Benzophenone-3 instantly solubilizes in Velsan D8P-3 liquid to produce these cold mix sunblocks similar to popular "Pre-Sun" products. In addition to benzophenone-3 solubilization, Velsan D8P-3 also imparts an excellent non-greasy afterfeel to the formula.

SPF 15
CL9-145-02

<u>Ingredients:</u>	<u>Wt%</u>
Velsan D8P-3	10.0
Benzophenone-3	3.0
SD Alcohol 40-2	25.0
Propylene Glycol Dicaprylate/Dicaprate	5.0
Octyldimethyl PABA	7.0
Cyclomethicone	50.0

Procedure:

Dissolve Benzophenone-3 into the Velsan D8P-3. Add remaining ingredients in any order and mix until homogeneous.

SPF20-25
CL9-145-03

<u>Ingredients:</u>	<u>Wt%</u>
Velsan D8P-3	10.0
Benzophenone-3	6.0
SD Alcohol 40-2	24.1
Propylene Glycol Dicaprylate/Dicaprate	4.6
Octyldimethyl PABA	7.0
Cyclomethicone	48.3

Procedure:

Dissolve Benzophenone-3 into the Velsan D8P-3. Add remaining ingredients in any order and mix until homogeneous.

SOURCE: Clariant Corp.: Ref: CL9-145-02, 03; CSS-01

Dry Touch Physical Sunscreen

This formula is not an emulsion but rather a suspension of several water-insoluble ingredients in water. The suspending agent Veegum Plus prevents these ingredients from settling and/or separating. The physical sunscreen used is micronized Titanium Dioxide. This formula also contains liposomes with a payload of the well-known moisturizing agents liposomes Sodium PCA and amino acids. A silicone oil dispersion is also included to enhance application properties. The formula contains no emulsifying agents.

<u>Ingredients:</u>	<u>Wt. %*</u>
A: Deionized Water	59.70
Veegum Plus, Magnesium Aluminum Silicate (and)	
Cellulose Gum	1.50
Rhodigel, Xanthan Gum	0.20
B: Glycerin (and) Titanium Dioxide (TiO ₂ Sperser GLY)	28.60
C: Deionized Water (and) Phenyltrimethicone (and)	
Cyclomethicone (and) Dimethiconol (and) Phospho-	
lipids (and) Phenoxyethanol (and) Methylparaben	
(and) Carbomer (and) Ethylparaben (and) Propyl-	
paraben (and) Butylparaben (Satin Finish)	5.00
D: Preservative	q.s.
E: Deionized Water (and) Sodium PCA (and) Phospholipids	
(and) Phenoxyethanol (and) Tocopheryl Acetate (and)	
Xanthan Gum (and) Arginine (and) Lysine (and) Glycine	
(and) Methylparaben (and) Proline (and) Ethylparaben	
(and) Propylparaben (and) Butylparaben (Moisturizing	
Liposomes)	5.00

Procedure:

Weigh and dry blend the Veegum Plus and Rhodigel. Add the blend to the Part A water at room temperature, mixing with a propeller mixer at 1800 rpm. Continue mixing for 30 minutes. Add Part B and mix 10 minutes at 1800 rpm. Add Parts C and D to the batch in the order shown. Mix Part C for 10 minutes at 1800 rpm before adding Part D. Mix Part D 5 minutes at the same speed. Slow the mixer to 500 rpm and add Part E. Mix 5 minutes and package.

*As received basis

SOURCE: R.T. Vanderbilt Co., Inc.: Formulation No. 464

Enriched Moisturizing Lotion (Before & After Tanning)

<u>Ingredients:</u>	<u>Wt%</u>
Sesame Oil U.S.P.	15.0
Polysynlane	20.0
Glyceryl Monostearate	3.0
Isopropyl Myristate	10.0
Carbopol 934	0.2
Propylene Glycol	10.0
Triethanolamine	1.0
Anhydrous Lanolin	5.0
Water	ad 100.0

Other Uses:

1. Polysynlane has food additive approval from the Welfare Ministry of Japan and was authorized for use as an additive for a chewing gum base.
2. Polysynlane is a refined hydrogenated polyisobutene, which has FDA approval (Subpart F 121.2511) for use as a plasticizer in polyethylene food wrap.
3. Polysynlane has found use as a special lubricant for fine instruments and watches, and is being investigated as an ultra low temperature lubricant and motor oil additive.

Sunscreen Spray

<u>No.</u>	<u>Phase:</u>	<u>Ingredient:</u>	<u>Wt%</u>
1	A	Cyclomethicone DC 345	55.60
2	A	Polysynlane	10.00
3	A	Grapeseed Oil	2.00
4	A	Sunflower Seed Oil	2.50
5	A	Vitamin E Acetate	0.25
6	A	Tenox 6	0.15
7	A	Fragrance Novarome NC-48	0.50
8	B	Ceraphyl 230	5.00
9	B	Octyl Methoxycinnamate	7.50
10	B	Oxybenzone	4.00
11	B	Octyl Salicylate	5.00
12	B	Transcutol	7.50

Manufacturing Instructions

Combine Phase A. Combine Phase B. Add Phase B to Phase A. Package.

An easy to apply spray that leaves the skin protected from both UVA and UVB radiation. It spreads quickly and is completely non-greasy. The anticipated SPF is 15. The formulation exhibits excellent solubilization of the oxybenzone, which is often seen to crystallize out.

SOURCE: Polyester Corp.: Suggested Formulations

Microfine Titanium Dioxide Sunscreen (O/W) Lotion
Broad Spectrum UVA/UVB Protection

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Glyceryl Stearate (and) PEG-100 Stearate/Arlacel 165	5.00
Steareth-10/Volpo S-10	2.00
Steareth-2/Volpo S-2	1.00
Mineral Oil/Drakeol 7 Lt	8.00
C12-15 Alcohols Benzoate/Finsolv TN	4.00
Diocetyl Adipate/Dermol DOA	2.00
Cetyl Dimethicone/Abil Wax 9801	1.50
Ceresin wax/White Ceresine 1502	1.00
Diisostearoyl Trimethylolpropane Siloxy Silicate/SF1318	3.00
Phase B:	
Titanium Dioxide/Eusolex T-2000	5.00
Phase C:	
Water, demineralized	57.30
Glycerin/Emery 916	3.00
Allantoin/Rona	0.20
Magnesium Aluminum Silicate/Veegum Ultra	1.00
Xanthan Gum/Keltrol RD	0.30
Phase D:	
(Isopropyl paraben, Isobutyl paraben, n-butyl paraben, phenoxyethanol)/LiquaPar PE	0.70

Procedure:

- 1) Combine water, glycerin and allantoin of phase C. Stir and heat to 65C. Dry mix xanthan gum and magnesium aluminum silicate. Add dry mixture to remaining phase C ingredients.
- 2) Combine phase A ingredients. Stir and heat to 75C until waxes are completely melted. Cool to 65C and maintain at this temperature.
- 3) Add phase B to A. Disperse with propeller mixer. Add phase C to A/B while mixing.
- 4) Homogenize allowing mixture to cool to 35C. Add phase D and stir/or homogenize until mixture is homogeneous.

Note:

Viscosity: 26,400 cps (Brookfield RV#5, 10 rpm @ 23C)
 Stability Freeze/Thaw: No separation after 5 cycles
 Stability 50C: No separation after 1 month

SOURCE: Rona/EM Industries, Inc.: Formula EUS6-60

Microfine Titanium Dioxide Sunscreen (W/O) Lotion
Broad Spectrum UVA/UVB Protection

INCI Name/Trade Name:	Wt%
Phase A:	
Octyl Stearate/Crodamol OS	7.00
Jojoba Oil/Floraesters Jojoba Oil, Refined	4.00
Caprylic/capric Triglycerides/Myritol 318	4.00
Petrolatum/Ultima white	3.00
Cyclomethicone/Dow Corning 344 Fluid	3.00
Dimethicone/Dow Corning 200 fluid, 100 cST	2.00
PEG-30 Dipolyhydroxystearate/Arlacel P135	2.50
Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone Copolyol (and) Hexyl Laurate/Abil WE-09	2.50
Cetearyl Alcohol (and) Cetearyl Phosphate/Crodafos CES	1.00
Ceresin Wax/White Ceresine 1502	0.50
Phase B:	
Deionized Water	56.30
Propylene Glycol	3.00
Allantoin/Rona	0.20
Sodium Chloride	0.50
Phase C:	
Titanium Dioxide/Eusolex T-2000	10.00
Phase D:	
(Isopropyl paraben, Isobutyl paraben, n-butyl paraben, Phenoxyethanol)/LiquaPar PE	0.50

Procedure:

Combine phase A. Heat to 75C with propeller mixer agitation until homogeneous. Add phase C to A. Cool mixture to 65C. Combine and heat phase B to 55C while stirring. Continue stirring until solids are fully dissolved. Slowly add phase B to A/C while stirring. Add phase D to A/B/C. Homogenize at moderate speeds to avoid aeration until temperature cools to 35C. Stir slowly allowing mixture to reach room temperature.

Note:

Viscosity: 16,000 cps (Brookfield RV#5, 10 rpm @ 25C)
 Stability Freeze/Thaw: No separation after 5 cycles
 Stability at 50C: No separation after 3 months

SOURCE: Rona/EM Industries, Inc.: Formula EUS-64

Microfine Titanium Dioxide Sunscreen (W/O) Lotion SPF 11
Broad Spectrum UVA/UVB Protection

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Octyl Stearate/Crodamol OS	7.00
Jobba Oil/Floraesters Jojoba Oil, Refined	4.00
Caprylic/capric Triglycerides/Myritol 318	4.00
Petrolatum/Ultima White	3.00
Cyclomethicone/Dow Corning 344 Fluid	3.00
Dimethicone/Dow Corning 200 fluid 50cST	2.00
PEG-30 Dipolyhydroxystearate/Arlacel P135	2.50
Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone	
Copolyol (and) Hexyl Laurate/Abil WE-09	2.50
Cetearyl Alcohol (and) Cetearyl Phosphate/Crodafos CES	1.00
Ceresin Wax/White Ceresine 1502	0.50
Phase B:	
Deionized Water	61.30
Propylene Glycol	3.00
Allantoin/Rona	0.20
Sodium Chloride	0.50
Phase C:	
Titanium Dioxide/Eusolex T-2000	5.00
Phase D:	
(Isopropyl paraben, Isobutyl paraben, n-Butyl paraben, phenoxyethanol)/LiquaPar PE	0.50

Procedure:

Combine phase A. Heat to 75C with propeller mixer agitation until homogeneous. Add phase C to A. Cool mixture to 65C. Combine and heat phase B to 55C while stirring. Continue stirring until solids are fully dissolved. Slowly add Phase B to A/C while stirring. Add phase D to A/B/C. Homogenize at moderate speeds to avoid aeration until temperature cools to 35C. Stir slowly allowing mixture to reach room temperature.

Note:

Viscosity 18,800 cps (Brookfield RV#5, 10 rpm @ 25C)
 Stability Freeze/Thaw: No separation after 5 cycles
 Stability at 50C: No separation after 2 months

SOURCE: Rona/EM Industries, Inc.: Formula EUS5-62

Oil and Emulsifier Free Sunscreen Lotion

Velsan D8P-16 acts as a solubilizer for the sunscreen agents and also imparts an excellent non-greasy afterfeel to these products. The formulations are oil free, emulsifier free and also exhibit gel-like characteristics.

Formula CSS-05:

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
SD Alcohol 39C	45.24
Hydroxypropyl Cellulose	1.50
Phase B:	
Velsan D8P-16	9.64
Octyl Methoxycinnamate	7.50
Benzophenone-3	3.00
SD Alcohol 39C	24.30
Fragrance	0.60
Phase C:	
Deionized Water	9.76

Formula CSS-06:

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
SD Alcohol 39C	44.24
Hydroxypropyl Cellulose	1.50
Phase B:	
Velsan D8P-16	9.64
Octyl Methoxycinnamate	7.50
Parsol 1789*	1.00
Benzophenone-3	3.00
SD Alcohol 39C	24.30
Fragrance	0.60
Phase C:	
Deionized Water	9.76

Procedure:

Disperse hydroxypropyl cellulose in SD Alcohol. Mix until a clear gel develops. For Phase B, add all ingredients except SD Alcohol and Fragrance in order with mixing. Heat to 45C with mixing until homogeneous. Cool to 35C and add the alcohol and fragrance with mixing. Add Phase B to Phase A and mix well. When Phase A/Phase B mixture is homogeneous, add Phase C slowly and mix completely.

Properties:

pH: 6.9

Viscosity: 7300+-500 cps

Appearance: Cloudy, light yellow gel-like lotion

*Parsol 1789 is not yet FDA approved.

SOURCE: Clariant Corp.; Ref: CL19-39: CSS-05 and CSS-06

O/W Emollient Sunscreen Lotions
UV-3 (SPF 6*)

<u>Ingredients:</u>		<u>Wt%</u>
A	Octyl dimethyl PABA	5.0
	Arlamol E, PPG-15 Stearyl ether	7.0
	Stearyl alcohol	2.5
	Dimethicone	1.0
	Arlasolve 200 Isoceteth-20	3.1
	Brij 72	3.9
B	Water	77.1
	Carbomer 934	0.2
C	Sodium hydroxide, 10% aqueous	0.2
D	Preservative and fragrance	q.s.

UV-4 (SPF 15*)

<u>Ingredients:</u>		<u>Wt%</u>
A	Octyl dimethyl PABA	7.0
	Benzophenone-3	3.0
	Arlamol E, PPG-15 Stearyl ether	7.0
	Stearyl alcohol	2.5
	Dimethicone	1.0
	Arlasolve 200 Isoceteth-20	3.1
	Brij 72	3.9
B	Water	72.1
	Carbomer 934	0.2
C	Sodium hydroxide solution, 10% aqueous	0.2
D	Preservative and fragrance	q.s.

Preparation:

Disperse Carbomer 934 in water and heat (B) to 60C. Heat (A) to 65C. Add (B) to (A) using propeller agitation. Slowly add (C) and increase speed of agitation as needed. Add (D) below 50C and replace water lost by evaporation.

*Estimated Sun Protection Factor

SOURCE: ICI Surfactants: Suggested Formulations

O/W Moisturizing Sunscreen CreamsUV-1 (SPF 6*)

<u>Ingredients:</u>	<u>Wt%</u>
A Octyl dimethyl PABA	5.0
Mineral oil	5.0
Stearyl alcohol	0.5
Brij 721, Steareth-21	2.0
Brij 72, Steareth-2	2.0
Dimethicone	0.5
B Water	84.6
Carbomer 940	0.2
C Sodium hydroxide solution, 10% aqueous	0.2
D Preservative and fragrance	q.s.

UV-2 (SPF 15*)

<u>Ingredients:</u>	<u>Wt%</u>
A Octyl dimethyl PABA	7.0
Benzophenone-3	3.0
Mineral oil	5.0
Stearyl alcohol	0.5
Brij 721, Steareth-21	2.0
Brij 72, Steareth-2	2.0
Dimethicone	0.5
B Water	79.6
Carbomer 940	2.0
C Sodium hydroxide, 10% aqueous	0.2
D Preservative and fragrance	q.s.

Preparation:

Disperse Carbomer 940 in water and heat (B) to 60C. Heat (A) to 65C. Add (B) to (A) using propeller agitation. Slowly add (C) and increase speed of agitation as needed. Add (D) below 50C and replace water lost by evaporation.

*Estimated Sun Protection Factor

SOURCE: ICI Surfactants: Formulas UV-1 & UV-2

Oil-in-Water Sun Milk with High SPF
(physical and chemical filters)

Ingredients:

	<u>Wt%</u>
A Arlamol HD	15.0
Arlamol S7	4.0
Parsol MCX*	6.0
Parsol 1789*	3.0
Lorol C18*	2.0
Antaron V-220*	3.0
Vitamin E Acetate*	1.0
Disodium EDTA	0.1
B Arlatone 2121	5.5
Atlas G-2330	4.0
Water	43.8
Keltrol*	0.1
Preservative	q.s.
Tioveil AQ*	12.5
Citric acid (20% solution)	to pH 6.5-7

Manufacture:

1. Disperse Tioveil AQ in water and adjust pH to 6.0-6.5 with acid.
2. Homogenise the water phase intensively for one minute.
3. Add Arlatone 2121 and other ingredients to the water phase.
4. Heat B to 85C.
5. Heat the oil phase A to 80C.
6. Add A to the hot aqueous phase B with stirring.
7. Homogenise the mixture intensively at 75C for one minute.
8. Allow to cool to room temperature whilst stirring.
9. Control pH and adjust if necessary to pH 6.0-6.5.

Comments:

Viscosity: 6,240 mPa s (Brookfield LVT, spindle D, rpm 6)

*Parsol MCX (Octyl Methoxycinnamate, INCI)-Givaudan-Roure
Parsol 1789 (Butyl Methoxydibenzoylmethane, INCI)-Givaudan-Roure

Lorol C18 (Stearyl Alcohol, INCI)-Henkel

Antaron V-220 (PVP/Eicosene Copolymer, INCI)-Roche

Vitamin E Acetate (Tocopheryl Acetate, INCI)-Roche

Keltrol (Xanthan Gum, INCI)-Kelco

Tioveil AQ (Titanium Dioxide (and) Water, INCI)-Tioxide

SOURCE: ICI Surfactants: Formulation F41-5-14

Oil-in-Water Sun Protection Cream

<u>Ingredients:</u>	<u>Wt%</u>
A Paraffin oil perliquidum*	10.0
Arlamol HD	5.0
Arlamol S7	4.0
Parсол MCX*	5.0
Parсол 1789*	5.0
Vitamin E acetate*	1.0
Stenol 1822A*	2.0
Anti-oxidant	q.s.
B Arlatone 2121	5.5
Glycerol	4.0
Preservative	q.s.
Water	62.9
C Rhodopol SC*	0.1
D Perfume	q.s.

Manufacture:

1. Mix the Arlatone 2121 in the heated water phase at 80C under moderate stirring until a homogeneous dispersion is formed.
2. Disperse the hydrocolloid in the heated aqueous phase at 75C with moderate stirring.
3. Add the heated oil phase to the aqueous phase under intensive stirring.
4. Homogenise the mixture intensively at 75C for one minute.
5. Cool to 35C whilst stirring moderately.
6. Add heat-sensitive ingredients whilst stirring moderately.

Comment:

During the cooling process (step 5), when Arlatone 2121 emulsion starts to build up in the lamellar crystalline structure, moderate stirring is recommended. Intensive stirring can break down the lamellar structure and can reduce the final viscosity. The viscosity of the formulation is inversely proportional to the mixing energy that has been put into the emulsion during manufacture.

Comments:

Viscosity: 159.120 mPa s (Brookfield LVT, spindle E, 1.5 rpm)
Energy input is related to the final formulation viscosity.

*Paraffin oil perliquidum (Mineral Oil, INCI)-Merck
Parсол MCX (Octyl Methoxycinnamate, INCI)-Givaudan-Roure
Parсол 1789 (Butyl Methoxybenzoylmenthane, INCI)-Givaudan-Roure
Vitamin E acetate (Tocopheryl Acetate, INCI)-Roche
Stenol 1822A (Behenyl Alcohol, INCI)-Henkel
Rhodopol SC (Xanthan Gum, INCI)-Rhône-Poulenc

SOURCE: ICI Surfactants: Formulation F41-5-2

Oil-in-Water Sun Protective Cream with "Natural" Sun Filter

<u>Ingredients:</u>		Wt%
A		
Arlamol HD		5.0
Arlamol S7		4.0
Paraffin oil perliquidum*		10.0
Lorol C18*		2.0
Vitamin E acetate*		1.0
B		
Tioveil AQ*		12.5
Arlatone 2121		5.5
Glycerol		4.0
Keltrol*		0.1
Disodium EDTA		0.1
Preservative		q.s.
Sorbic acid		0.2
Demineralised water		to 100

Manufacture:

1. Disperse Tioveil AQ in water and adjust pH to 6.0-6.5 with acid.
2. Homogenise the water phase intensively for one minute.
3. Add Arlatone 2121 and other ingredients to the water phase.
4. Heat B to 85C.
5. Heat the oil phase A to 80C.
6. Add A to the hot aqueous phase B with stirring.
7. Homogenise the mixture intensively at 75C for one minute.
8. Allow to cool to room temperature whilst stirring.
9. Control pH and adjust if necessary to pH 6.0-6.5.

Comments:

Viscosity (after 1 week): 46,490 mPa s (Brookfield LVT, spindle E, 6 rpm)

Energy input is related to final formulation viscosity

*Paraffin oil perliquidum (Mineral Oil, INCI)-Merck
 Lorol C18 (Stearyl Alcohol, INCI)-Henkel
 Vitamin E acetate (Tocopheryl Acetate, INCI)-Roche
 Tioveil AQ (Titanium Dioxide (and) Water, INCI)-Tioxide
 Keltrol (Xanthan Gum, INCI)-Kelco

SOURCE: ICI Surfactants: Formulation F41-5-13

Self Tanning Cream W/UV Filter (O/W)**SPF 19.0/UVA PF 9.5 (Sun Protection Factor, Diffey Method)**

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Octyl Methoxycinnamate/Neo Heliopan AV	5.00
Benzophenone-3/Eusolex 4360	2.00
Glyceryl Stearate (and) Steareth-25 (and) Ceteth-20 (and) Stearyl Alcohol/Tego-Care 150	8.00
Cetearyl Alcohol/Lanette O	1.50
Stearoxy Dimethicone/Abil Wax 2434	1.60
Cetearyl Octanoate/Luvitol EHO	5.00
Paraffin Liquid	3.00
Caprylic/Capric Triglyceride/Miglyol 812 neutral oil	5.00
Dimethicone/Dow Corning 200 (350 cs)	0.50
Phase B:	
1,2-Propanediol/Propylene Glycol	3.00
Methyl Paraben	0.15
Propyl Paraben	0.05
Deionized Water	50.20
Phase C:	
Dihydroxyacetone/Rona	5.00
Deionized Water	10.00

Procedure:

Heat phase A to 75C, phase B to 80C. Add phase B slowly to phase A while stirring. Homogenize. Cool down while stirring and add phase C at 40C.

Note:

Viscosity: 38,800 cp (Brookfield RVT, Sp. F, 10 rpm) at 26C

Sunscreen Cream SPF 12

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Deionized Water	44.23
Carbomer (2% aq. solution)/Carbopol 980	15.00
Propylene Glycol	5.00
Methyl Paraben	0.20
Propyl Paraben	0.10
Triethanolamine (99%)	0.45
Tetrasodium EDTA	0.02
Phase B:	
Octyl Methoxycinnamate/Neo Heliopan AV	5.00
Benzophenone-3/Eusolex 4360	3.00
Glyceryl Stearate (and) PEG-100 Stearate/Arlacel 165	1.00
Cyclomethicone/Dow Corning 344 Fluid	5.00
Glyceryl Stearate	4.00
Stearic Acid/Emersol 132, NF	2.50
Isostearyl Isostearate/Prisorine ISIS 2039	10.00
Hydrogenated Castor Oil/Castorwax	2.00
C12-15 Alcohols Benzoate/Finsolv TN	2.50

Procedure:

Add Phase A ingredients to main vessel under impeller agitation. Heat Phase A to 75-80C. Combine Phase B ingredients; heat and mix to 85C. Slowly add Phase B to batch; mix for 15 minutes at 85C. Remove from heat; switch to paddle mixing and cool to RT.

SOURCE: Rona/EM Industries, Inc.: Formula 06-13/K&EUS2-93-2

Self Tanning Cream W/UV Filter (O/W)SPF 20.5/UVA PF 8.5 (Sun Protection Factor, Diffey Method)

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Octyl Methoxycinnamate/Neo Heliopan AV	5.00
Butyl Methoxydibenzoylmethane/Parsol 1789	1.50
Ceteareth-11/Marlipal 1618	3.00
Cetearyl Alcohol/Lanette O	7.00
Cetearyl Octanoate/Luvitol EHO	5.00
C12-15 Alkyl Benzoate/Finsolv TN	2.50
Caprylic/Capric Triglyceride/Miglyol 812 neutral oil	2.50
Phase B:	
1,2-Propanediol/Propylene Glycol	4.00
Methyl Paraben	0.15
Propyl Paraben	0.05
Deionized Water	54.30
Phase C:	
Dihydroxyacetone/Rona	5.00
Deionized Water	10.00

Procedure:

Heat phase A to 75C, phase B to 80C. Add phase B slowly to phase A while stirring. Homogenize. Cool down while stirring and add phase C at 40C.

Note:

Viscosity: 41,700 cp (Brookfield RVT, Sp.C, 10 rpm) at 26C

Sunscreen Cream SPF 9

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Deionized Water	29.53
Carbomer (2% aq. solution)/Carbopol 980	15.00
Propylene Glycol	5.00
Methyl Paraben	0.20
Propyl Paraben	0.10
Triethanolamine (99%)	0.45
Phase B:	
Deionized Water	10.00
Tetrasodium EDTA	0.02
Phenylbenzimidazole Sulfonic Acid (% as acid)/Eusolex 232	4.00
Triethanolamine (99%)	4.20
Phase C:	
Glyceryl Stearate (and) PEG-100 Stearate/Arlacel 165	1.00
Cyclomethicone/Dow Corning 344 Fluid	5.00
Stearic Acid/Emersol 132, NF	5.00
Isostearyl Isostearate/Prisorine ISIS 2039	10.00
C12-15 Alcohols Benzoate/Finsolv TN	10.50

Procedure:

Add Phase A ingredients to main vessel under impeller agitation. Heat Phase A to 75-80C. Combine Phase B ingredients; mix to clarity while heating to 70C. Slowly add Phase B to Phase A. Mix combined phases at 75-80C. Combine Phase C ingredients; heat and mix to 85C. Slowly add Phase C to batch; mix for 15 minutes at 85C. Remove from heat; switch to paddle mixing and cool to RT.

SOURCE: Rona/EM Industries, Inc.: Formula46-08/K&EUS2-47-5

Self Tanning Lotion (O/W)

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Deionized Water	40.15
Xanthan Gum/Keltrol	0.75
Propylene Glycol	5.00
Methylparaben	0.20
Propylparaben	0.10
Phase B:	
Steareth-10/Brij 76	0.70
Glyceryl Stearate (and) PEG-100 Stearate/Arlacel 165	1.20
PEG-40 Stearate/Myrj 52-S	0.40
Cetearyl Alcohol (and) Ceteareth-20/Cosmowax J	1.00
Cetearyl Alcohol	1.50
Cyclomethicone/Dow Corning 344 Fluid	5.00
Dimethicone/Dow Corning 200 Fluid 100 cs	0.50
Octyldodecyl Neopentanoate/Elfac I-205	28.50
Phase C:	
Deionized Water	10.00
Dihydroxyacetone/Rona	5.00

Procedure:

Charge phase A water into main vessel. Under low homogenization, sprinkle in xanthan gum, mix to uniformity. Charge remaining Phase A ingredients. Maintaining homogenization, heat phase A to 75-80C. Combine phase B ingredients in side vessel. Mix phase B while heating to 85C. Emulsify by adding phase B to phase A; adjust homogenizer speed as necessary to ensure adequate batch turnover. Hold batch at 85C for 10 minutes. Switch from homogenization to impeller mixing at 60C. Combine phase C at room temperature; mix to uniformity. Add phase C to batch at 40C. Mix batch until it reaches room temperature. Formula EUS2-27-2

Self Tanning Lotion (W/O)

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Cyclomethicone (and) Dimethicone Copolyol/Dow Corning 3225C	23.60
Phase B:	
Dihydroxyacetone/Rona	5.00
1,2-Propanediol/Propylene Glycol	35.90
Methyl Paraben	0.15
Propyl Paraben	0.05
Deionized Water	35.30

Procedure:

Combine Phase B ingredients and stir. Add Phase B to Phase A and stir.

Notes:

Transparent, oil-free W/O
Transparency can be adjusted by varying ratio of water/propylglycol

Viscosity 12,000 cps (Brookfield RVT, Sp 4, 10 rpm) at 24C
Formula 01-01/L

SOURCE: Rona/Em Industries, Inc.: Suggested Formulations

Self Tanning Milk (O/W)

<u>Raw Materials:</u>	<u>Wt%</u>
A Emulsifier E 2155 (Stearyl Alcohol (and) Steareth-7 (and) Steareth-10)	2.00
Teginacid H (Glyceryl Stearate (and) Ceteth-20)	2.00
Luvitol EHO (Cetearyl Octanoate)	10.00
Imwitor 900 (Glyceryl Stearate)	3.00
Cetiol (Oleyl Oleate)	5.00
Lunacera M (Microwax)	1.00
Miglyol 812 neutral oil (Caprylic/Capric Triglyceride)	3.00
B Propanediol-1,2 (Art. No. 107478) (Propylene Glycol)	4.00
Preservatives	q.s.
Water, demineralized	ad 100.00
C Dihydroxyacetone (Art. No. 110150)	5.00
Water, demineralized	10.00

Procedure:

Heat phase A to 75C, phase B to 80C. Add phase B slowly to phase A while stirring. Homogenize. Cool down while stirring and add phase C at 40C.

Note:

pH24C=3.6

Viscosity 15,000 mPas (Brookfield RVT, Sp. C, 10 rpm) at 24C

Samples contain as preservatives:

0.05% Propyl-4-hydroxybenzoate (Merck Art. No. 107427)

0.15% Methyl-4-hydroxybenzoate (Merck Art. No. 106757)

SOURCE: Rona-Merck: Formulation 03-07/K

Leave-On Hair Treatment Spray with Sunscreen

A light hair and scalp treatment containing Lipamide MEAA and Lipoquat R for conditioning and shine, with Unitrienol T-27 for oil control. The Unipabol U-17 helps protect the hair from UV induced color damage.

<u>Sequence:</u>	<u>Raw Material/INCI Name:</u>	<u>Wt%</u>
1	Liponic EG-1/Glycereth-26	3.00
1	Lipamide MEAA/Acetamide MEA	3.50
1	Lipoquat R/Ricinoleamidopropyl Ethyldimonium Ethosulfate	0.50
2	Deionized Water	3.00
2	Unipabol U-17/PEG-25 PABA	7.50
3	SD Alcohol 40-B (190 proof)	73.50
4	Unitrienol T-27/Farnesyl Acetate (and) Farnesol (and) Panthenyl Triacetate	2.00
4	Lipovol J/Jojoba (Buxus Chinensis) Oil	1.00
4	Liponate NPGC-2/Neopentyl Glycol Dicaprylate/Dicaprate	6.00

Procedure:

1. Premix Sequence #1 ingredients at ambient temperature on overhead mixer at low/medium speed.
2. Premix Sequence #2 and add to Sequence #1 at low/medium speed.
3. Add combined Sequence #1 and Sequence #2 to Sequence #3 on overhead mixer at medium/low speed.
4. Add premixed Sequence #4 to batch at medium speed until solution is clear and homogeneous.

SOURCE: Lipo Chemicals Inc.: Formulation No. 1005

Sunblock Lotion

In this formula, Veegum is used with Rhodigel Xanthan Gum and a Xanthan Gum-based dispersible emulsifier to stabilize the emulsion and adjust emulsion viscosity. This cold process lotion has a light feel with quick, greaseless rub in. The sunscreen should offer considerable protection against sunlight-induced skin problems. The Ritachol and Finsolv are included for emollience and rapid skin absorption on rub-in.

<u>Ingredients:</u>	<u>Wt%*</u>
A: Veegum, Magnesium Aluminum Silicate	0.60
Rhodigel, Xanthan Gum	0.15
Deionized Water	65.45
Nonfat Dry Milk (and) Xanthan Gum (and) Glyceryl Stearate (and) Hydrogenated Vegetable Glycerides Phosphate	0.80
Propylene Glycol	3.00
B: C12-15 Alkyl Benzoate (Finsolv TN)	8.00
Benzophenone-3 (Escalol 567)	5.00
Octyl Methoxycinnamate (Parsol MCX)	7.50
Mineral Oil (and) Lanolin Alcohol (Ritachol)	4.00
Polysorbate 80	0.50
C: Zinc Oxide	5.00
D: Preservative	q.s.

Procedure:

Add the Veegum/Rhodigel dry blend to the water slowly, agitating at maximum available shear until smooth. Add the remaining Part A ingredients in the order shown, mixing after each until smooth and uniform. Mix the Part B ingredients until the Benzophenone-3 dissolves. Add Part B to Part A and mix until smooth and uniform.

*As received basis
Formulation No. 367

TiO₂ Lotion

<u>Ingredients:</u>	<u>Wt%*</u>
A: Propylene Glycol Isoceteth-3 Acetate (Hetester PHA)	10.00
Octyldodecyl Neopentanoate (Elefac I-250)	10.00
Titanium Dioxide (and) Bismuth Oxychloride (Titanium Dioxide 110)	10.00
B: Deionized Water	68.90
Veegum, Magnesium Aluminum Silicate	0.70
Rhodigel, Xanthan Gum	0.30
C: Methylchloroisothiazolinone (and) Methylisothiazolinone	0.10

Procedure:

Weigh the water into a suitable vessel and mix with a propeller mixer at 1800 rpm. Dry blend the Veegum and Rhodigel and add them to the water. Mix for 60 minutes. In a separate vessel, mix the Part A ingredients until the Titanium Dioxide is uniformly dispersed. Add Part A to Part B and mix until uniform. Add Part C, mix until uniform and package. *As received basis

Formulation from Bernel Chemical Co., Inc.

SOURCE: R.T. Vanderbilt Co., Inc.: Suggested Formulations

SPF 12 Sunscreen Liposome Lotion

This is an elegant feeling sunscreen in a cold-process lotion containing liposomes for longer lasting protection.

<u>Ingredient:</u>	<u>Wt%*</u>
A: Deionized Water	58.53
Veegum Magnesium Aluminum Silicate	1.40
Rhodigel Xanthan Gum	0.18
Cellulose Gum (CMC 7MF)	0.56
B: Glycerin, 99%	3.00
Butylene Glycol (and) Glycerin (and) Chlorophenesin (and) Methylparaben (Killitol)	3.00
Water (and) Octyl Methoxycinnamate (and) Phenyl Trimethicone (and) Cyclomethicone (and) Dimethiconal (and) Phosphoglycerides (and) Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Propylparaben (and) Butylparaben (Sansuif OMC)	23.33
Water (and) Octyl Methoxycinnamate (and) Soy Phosphoglycerides (and) Phenoxyethanol (and) Tocopheryl Acetate (and) Methylparaben (and) Propylparaben (and) Ethylparaben (and) Butylparaben (Sunscreen Liposomes)	10.00

Procedure:

Weigh the water into a suitable vessel and mix with a propeller stirrer at 1800 rpm. Weigh and dry blend the Veegum, Rhodigel and CMC and add them to the water. Continue mixing for 60 minutes at 1800 rpm. Reduce the mixer speed to produce a slight vortex and add the Part B ingredients in the order shown, mixing each for 5 minutes. Package.

*As received basis

SOURCE: R.T. Vanderbilt Co., Inc: Formulation from Collaborative Laboratories

PABA Free Milk & Honey Sunscreen Stick

The following formulation produces a waterproof sunscreen stick which has a SPF factor of approximately 10-20.

<u>Ingredients:</u>	<u>Wt%*</u>
Monalac ML (Refined Milk Lipid)	70.0
Bleached Beeswax	20.0
Octyl Methoxycinnamate	7.0
Benzophenone-3	3.0
Fragrance	qs

Procedure:

Blend the Monalac ML and Beeswax together at 65-75°C. Avoid air entrainment. When uniform, add other ingredients one at a time and continue blending until clear. Reduce heat, add fragrance and pour at 50-65°C into package. A rich, smooth, protective and non-greasy skin covering will be provided.

SOURCE: Mona Industries, Inc.: Formulation F-735

Sun Care Emulsion
SPF (Calculated) approx. 15

<u>Component:</u>	<u>Wt%</u>
I Emulgin VL 75/Lauryl Glucoside (and) Polyglyceryl-2	
Dipolyhydroxystearate (and) Glycerin	4.5
Myritol 331/Cocoglycerides	6.0
Baysilon M 350/Dimethicone	0.5
Cetiol 868/Octyl Stearate	2.5
Octyl Methoxycinnamate	4.0
Isoamyl p-Methoxycinnamate	4.0
Benzophenone-3	1.0
Copherol 1250/Tocopherol	0.5
Carbopol ETD 2001/Carbomer	0.3
II Glycerine 86%	3.0
Water	71.9
NaOH 10%/Sodium Hydroxide	1.8
Preservative/perfume	q.s.

pH Value: 6.9

Viscosity Brookfield mPas: 14,000

Preparation in the Laboratory:

Mix phase I at room temperature. Add phase II while stirring. After that, homogenize. Finally add the neutralisation agent as well as the preservative.

Formulation No. 97/119/3

Sunscreen Products

<u>Ingredients:</u>	<u>94/056/167</u>	<u>94/056/168</u>
Emulgade SE/Glyceryl Stearate (and)		
Ceteareth-20 (and) Ceteareth-12 (and)		
Cetearyl Alcohol (and) Cetyl Palmitate	8.0	8.0
Lanette O/Cetearyl Alcohol	1.5	1.5
Cetiol LC/Coco-Caprylate/Caprate	3.0	3.0
Cetiol SN/Cetearyl Isononanoate	3.0	3.0
Cetiol SB 45/Butyrospermum Parkii	2.0	2.0
Copherol 1250/Tocopheryl Acetate	1.0	1.0
Neo-Heliopan E 1000	8.5	8.5
Neo-Heliopan BB	2.5	2.5
Glycerol (86%)	3.0	3.0
Tylose YP 100,000	0.6	0.6
Hydagen CMF/Chitosan	10.0	---
Water	56.9	66.9

SOURCE: Henkel KGaA: Suggested Formulations

Sun Care Lotion with Hydagen CMF

<u>Phase:</u>	<u>Component:</u>	<u>Wt%</u>
I	Emulgade SE	8.0
	Lanette O/Cetearyl Alcohol	1.5
	Cetiol LC/Coco-Caprylate/Caprates	3.0
	Cetiol SN/Cetearyl Isononanoate	3.0
	Cetiol SB 45/Shea Butter	2.0
	Copherol 1250/Tocopherol	1.0
	Neo Heliopan E 1000/Isoamyl p-Methoxycinnamate	8.0
	Neo Heliopan BB/Benzophenone-3	2.5
II	Glycerin 86%	3.0
	Hydagen CMF/Chitosan Glycolate	10.0
	Water, de-ionized	28.0
III	Tylose H 100,000 YP (Hoechst) 2%ig/Hydroxyethyl-cellulose	30.0
IV	Preservative	q.s.
Viscosity (mPas), Brook. RVF, 23C, spindle 5, 10 rpm: 23,600		
Preparations in the Laboratory:		
Heat phase I to 80-85C. Heat phase II to 80-85C and add to the oil phase while stirring. Emulsify for 5 minutes at this temperature. Avoid incorporation of air. Add the 2% Tylose swelling. Cool down to 40C and add finally phase IV. Stir while cooling to 30C.		
Recipe Number: DE/94/056/167		

Sun Protection Emulsion for Spray-ApplicationLSF/SPF (Colipa) 9

<u>Component:</u>	<u>Wt%</u>
I Emulgade SE/Glyceryl Stearate (and) Ceteareth-20 (and) Ceteareth-12 (and) Cetearyl Alcohol (and) Cetyl Palmitate	4.7
Eumulgin B2/Ceteareth-20	1.3
Cetiol 868/Octyl Stearate	6.0
Cetiol SN/Cetearyl Isononanoate	6.0
Isoamyl Methoxycinnamate	4.0
Benzophenone-3	1.0
Copherol F 1300/Tocopherol	1.0
II Water	71.0
Glycerin 86%	5.0
III Preservative	q.s.
Viscosity mPas: <100	

Preparation in the Laboratory:

1. Melt phase I at 80-85C and stir homogeneously.
 2. Heat phase II at 80-85C and stir slowly into phase I. Mixture temperature 80-85C.
 3. Allow the emulsion to cool while stirring. The stirring rate must be selected in such a way that the emulsion is kept in continual motion and no air is trapped. Add preservative up on necessity. End of stirring by 30C.
- Formulation No.: 93/199/65

SOURCE: Henkel KGaA: Suggested Formulations

Sun Protection Cream (W/O)SPF 22 (Sun Protection Factor, Colipa Method with 5 Volunteers)Raw Materials:

	<u>Wt%</u>
A: Eusolex OCR (Art. No. 1.05377) (Octocrylene)	3.00
Eusolex 9020 (Art. No. 1.05844) (Butyl Methoxydi-benzoylmethane)	1.50
Elfacos E 200 (Methoxy PEG-22/Dodecyl Glycol Copolymer)	1.00
Elfacos ST 9 (PEG-45/Dodecyl Glycol Copolymer)	3.00
Elfacos C 26 (Hydroxyoctacosanyl Hydroxystearate)	5.00
Paraffin Oil Liquid (Art. No. 1.07162) (Mineral Oil)	8.00
Isopropyl Stearate	9.00
DL- α -Tocopherol acetate (Art. No. 5.00952) (Tocopheryl Acetate)	0.50
B: Eusoflex 232 (Art. No. 1.05372) (Phenylbezimidazole Sulfonic Acid)	2.00
Tris(hydroxymethyl)-aminomethane (Art. No. 1.08386) (Tromethamine)	0.89
Tritiplex III (Art. No. 1.08421) (Disodium EDTA)	0.10
Allantoin (Art. No. 1.01015)	0.10
Glycerine (Art. No. 1.04093)	3.00
Preservatives	q.s.
Water, demineralized	ad 100.00

Procedure:

To neutralize Eusolex 232 dissolve Tris(hydroxymethyl)-aminomethane in the water of phase B and add Eusolex 232 while stirring. When uniform add the remaining ingredients of phase B and heat to 80C. Heat phase A to 75C. Add phase B slowly to phase A while stirring. Homogenize and cool down while stirring.

Note:

Viscosity 41,000 mPas (Brookfield RVT, Sp. C, 5 rpm) at 24C
 Samples contain as preservatives:
 0.050% Propyl-4-hydroxybenzoate (Merck Art. No. 107427)
 0.150% Methyl-4-hydroxybenzoate (Merck Art. No. 106757)

SOURCE: Rona-Merck: Formulation 04-02/K

Sun Protection Emulsion for Spray Application
SPF (COLIPA) 9

<u>Component:</u>	<u>Wt%</u>
I. Emulgade SE/Glyceryl Stearate (and) Ceteareth-20 (and) Ceteareth-12 (and) Cetearyl Alcohol (and) Cetyl Palmitate	4.7
Eumulgin B2/Ceteareth-20	1.3
Cetiol 868/Octyl Stearate	6.0
Cetiol SN/Cetearyl Isononanoate	6.0
Neo-Heliopan E 1000/Isoamyl Methoxycinnamate	4.0
Neo-Heliopan BB/Benzophenone-3	1.0
Copherol F 1300/Tocopherol	1.0
II. Water, demineralized	71.0
Glycerol 86%	5.0
III. Preservative	q.s.
Viscosity, mPas: <100	
Brookfield, 23C	
Preparation in the Laboratory:	
1. Melt phase I (80-85C) and stir until homogeneous.	
2. Heat phase II at 80-85C and stir slowly into phase I. Mix temperature at 80-85C.	
3. Allow the emulsion to cool with stirring in such a way that it remains in continual motion. Avoid incorporation of air. Add phase III at 35C. Add preservative if necessary. Stop stirring at 30C.	
Formulation No.: 93/199/65	

After Sun with Panthenol for Spray Application

<u>Component:</u>	<u>Wt%</u>
I. Emulgade SE/Glyceryl Stearate (and) Ceteareth-20 (and) Ceteareth-12 (and) Cetearyl Alcohol (and) Cetyl Palmitate	4.5
Eumulgin B 2/Ceteareth-20	1.0
Cetiol LC/Coco-Caprylate/Caprate	5.0
Cetiol OE/Dicaprylyl Ether	5.0
II. Water, demin.	83.5
III. Panthenol	1.0
Preservative	q.s.
Viscosity, 23C, mPas, Brookfield: <100	
Preparation in the Laboratory:	
1. Heat phase I to 85C and stir until homogeneous.	
2. Heat phase II to 85C and stir slowly into phase I.	
3. Allow the emulsion to cool with stirring in such a way that it remains in continual motion. Avoid incorporation of air. Add phase III at 35C. Add preservative if necessary. Stop stirring at 30C.	
Formulation No.: 94/192/8	
SOURCE: Henkel KGaA: Suggested Formulations	

Sun Protection Gel (aqueous)
SPF 10 (Sun Protection Factor, FDA-Method with 5 Volunteers)

<u>Raw Materials:</u>	<u>Wt%</u>
A Eusolex 232 (Art. No. 105372) (Phenylbenzimidazole Sulfonic Acid)	4.00
Tris-(hydroxymethyl)-aminomethane (Art. No. 108386) (Tromethamine)	1.77
Allantoin (Art. No. 101015)	0.20
Sorbitol F liquid (Art. No. 102993)	5.00
Preservatives	q.s.
Water, demineralized	ad 100.00
B Perfume 72979	0.30
Arlatone 980 (PEG-35-Hydrogenated Castor Oil)	1.00
C Carbomer 940	1.50
Water, demineralized	36.10
D Tris(hydroxymethyl)-aminomethane (Art. No. 108386) Tromethamine	2.40
Water, demineralized	10.00

Procedure:

To neutralize Eusolex 232 dissolve Tris(hydroxymethyl)-aminomethane in the water of phase A and add Eusolex 232 while stirring. When uniform add the remaining ingredients of Phase A. Heat to 70C until homogeneous and cool while stirring. Blend ingredients of phase B. Disperse Carbomer 940 in the water of phase C and homogenize. Dissolve the Tris(hydroxymethyl)-aminomethane in the water of phase D. Combine phases C and D and homogenize. Incorporate phases A and B. Homogenize again.

Note:

Transparent gel
 Viscosity 35,000 mPas (Brookfield RVT, Sp. C, 5 rpm) at 25C
 pH22C=6.7
 Samples contain as preservatives:
 0.20% Methyl-4-hydroxybenzoate (Merck-Art.-No. 6757)

SOURCE: Rona-Merck: Formulation 32-02/E

Sun Protection Lotion (W/O)SPF 20 (Sun Protection Factor, Colipa Method with 5 Volunteers)

<u>Raw Materials:</u>	<u>Wt%</u>
A Eusolex T 2000 (Art.-No. 105373) (Micron. Titandioxid)	3.00
Eusolex 6300 (Art.-No. 1.05385) (4-Methylbenzylidene Camphor)	2.00
Abil WE 09 (Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone Copolyol (and) Hexyl Laurate)	5.00
Jojoba Oil (Jojoba (Buxus Chinensis) Oil)	6.00
Cetiol V (Decyl Oleate)	6.00
Prisorine 2021 (Isopropyl Isostearate)	4.50
Castor Oil (Ricinus Communis)	1.00
Lunacera M (Microwax)	1.80
Miglyol 812 Neutral Oil (Caprylic/Capric Triglyceride)	4.50
DL- α -Tocopherolacetate (Art.-No. 5.00952) (Tocopheryl Acetate)	1.00
Vitamin-A-palmitate (Retinyl Palmitate)	0.50
B Eusolex 232 (Art.-No. 105372) (Phenylbenzimidazole Sulfonic Acid)	2.00
Tris(hydroxymethyl)-aminomethane (Art.-No. 1.08386) (Tromethamine)	0.90
Glycerol (about 87%) (Art. No. 1.04091)	2.00
Sodium Chloride (Art. No. 1.06400)	0.40
Allantoin (Art.-No. 1.01015)	0.20
Preservatives	q.s.
Water, demineralized	ad 100.00

Procedure:

To neutralize Eusolex 232 dissolve Tris(hydroxymethyl)-aminomethane in the water of phase B and add Eusolex 232 while stirring. When uniform add the remaining ingredients of phase B and heat to 80C. Heat phase A to 75C. Add phase B slowly to phase A while stirring. Homogenize and cool down while stirring.

Notes:

Viscosity 24,600 mPas (Brookfield RVT, Sp. C) at 24C

Samples contain as preservatives:

0.05% Propyl-4-hydroxybenzoate (Art. No. 1.07427)

0.15% Methyl-4-hydroxybenzoate (Art. No. 1.06757)

SOURCE: Rona-Merck: Formulation 39-44/E

Sun Protection Lotion (O/W)SPF 23 (Sun Protection Factor, Colipa Method with 5 Volunteers)

<u>Raw Materials:</u>	<u>Wt%</u>
A Eusolex T-2000 (Art. No. 1.05373) (Micron. Titanium Dioxide)	10.00
Emulsifier E-2155 (Stearyl Alcohol (and) Steareth-7 (and) Steareth-10)	3.00
Teginacid H (Glyceryl Stearate (and) Ceteth-20)	3.00
Luvitol EHO (Cetearyl Octanoate)	10.50
Imwitor 900 (Glyceryl Stearate)	3.00
Cetiol (Oleyl Oleate)	4.00
Lunacera M (Microwax)	1.00
Miglyol 812 neutral oil (Caprylic/Capric Triglyceride)	4.00
B Propanediol-1,2 (Art.-No. 1.07478) (Propylene Glycol)	4.00
Allantoin (Art.-No. 1.01015)	0.20
Preservatives	q.s.
Water, demineralized	100.00

Procedure:

Heat phase A to 75C and phase B to 80C. Add phase B slowly to phase A while stirring, homogenize and cool down while stirring.

Note:

Viscosity 24,600 mPas (Brookfield RVT Sp. C, 10 rpm) at 24C

Samples contain as preservatives

0.05% Propyl-4-hydroxybenzoate (Art. No. 1.07427)

0.15% Methyl-4-hydroxybenzoate (Art. No. 1.06757)

Formulation 03-36/K

Self Tanning Milk (W/O)

<u>Raw Materials:</u>	<u>Wt%</u>
A Dow Corning 3225 C	23.600
B Dihydroxyacetone (Art.-No. 10150)	5.000
Propanediol-1,2 (Art.-No. 7478)	35.900
Preservatives	q.s.
Water, demineralized	ad 100.000

Procedure:

Dissolve phase B and add it to phase A.

Note:

Transparent, oil-free W/O

Adjusting of transparency through variation of ratio water/propanediol-1,2.

Viscosity 12,000 mPas (Brookfield RVT, Sp.4, 10 rpm) at 24C

Samples contain as preservatives:

0.05% Propyl-4-hydroxybenzoate (Merck-Art.-No. 7427)

0.15% Methyl-4-hydroxybenzoate (Merck-Art.-No. 6757)

Formulation 01-01/L

SOURCE: Rona-Merck: Suggested Formulations

Sunscreen CreamsUV-6 (SPF 6*)

<u>Ingredients:</u>		<u>Wt%</u>
A	Octyl methoxycinnamate	5.0
	Benzophenone-3	0.5
	Arlamol E	5.0
	Stearyl alcohol	0.5
	Dimethicone, 350 cps.	0.5
	Brij 721	2.0
	Brij 72	2.0
B	Water	74.1
	Carbomer 940	0.2
C	Water	10.0
	Sodium hydroxide, 10% aqueous	0.2

UV-7 (SPF 15*)

<u>Ingredients:</u>		<u>Wt%</u>
A	Octyl methoxycinnamate	7.0
	Benzophenone-3	3.0
	Arlamol E	5.0
	Stearyl alcohol	0.5
	Dimethicone, 350 cps.	0.5
	Brij 721	2.0
	Brij 72	2.0
B	Water	69.6
	Carbomer 940	0.2
C	Water	10.0
	Sodium hydroxide, 10% aqueous	0.2

Preparation:

Disperse Carbomer in water. Heat (A) to 65C. Heat (B) to 60C. Add (B) to (A) slowly with propeller agitation. Add (C) and stir until uniform. Cool to 50C and add make-up water, if necessary. Pour above set point.

*Estimated Sun Protection Factor

SOURCE: ICI Surfactants: Formulas UV-6 & UV-7

Sunscreen Emulsion, Type O/W

<u>Raw Materials:</u>	<u>Wt%</u>
a) Arlamol HD	15.00
Arlamol S 7	4.00
Parsol MCX	6.00
Parsol 1789	1.50
Stearyl alcohol	2.00
Antaron V-220	3.00
Cutavit Richter	1.00
Phenonip	0.30
b) Water, distilled	39.80
Phenonip	0.30
Keltrol	0.10
G-2330	4.00
Tioveil AQ	12.50
Arlatone 2121	5.50
Citric acid	5.50
c) Protectan	5.00

Manufacture:

- a) Melt and bring to about 85C.
 b) Heat to about 85C and stir into a).
 Continue stirring until the emulsion has cooled to about 30C.
 c) Stir in. Perfume, homogenize.

Notice: b) adjust pH to 6.5-7.0 using citric acid!

SOURCE: Chemisches Laboratorium Dr. Kurt Richter GmbH: Formulas

Clear Sunscreen Gel

This formula is a clear, oil-free gel. Excellent non-greasy afterfeel.

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
SD Alcohol 40-2	44.07
Hydroxypropyl Cellulose	1.67
Phase B:	
Velsan D8P-3	9.64
Octyl Methoxycinnamate	7.50
Parsol 1789*	1.00
Benzophenone-3	2.00
SD Alcohol 40-2	24.30
Fragrance	0.60
Phase C:	
Deionized Water	9.76

Procedure:

Disperse the hydroxypropyl cellulose in Phase A's portion of the SD Alcohol. Mix until a clear gel develops. In Phase B add ingredients in order while mixing. Continue mixing until all of the benzophenone-3 and Parsol 1789 is dissolved. Add Phase B to Phase A and continue to mix until a smooth gel develops. Slowly add water with mixing until gel is clear and homogeneous.

Properties:

pH: 6.4

Viscosity: 12,800 cps

Appearance: Clear, Yellow Gel

*Parsol 1789 is not yet FDA approved.

SOURCE: Clariant Corp.: Formulation CSS-04

Sunscreen Emulsion with Titanium Dioxide

This base is an ideal starting point for sunscreen lotions. It is a very stable formulation for any type of pigmented product.

<u>Ingredient:</u>	<u>Wt%*</u>
A: Deionized Water	61.98
Veegum, Magnesium Aluminum Silicate	0.50
Cellulose Gum	0.15
Allantoin	0.05
Methylparaben	0.20
Titanium Dioxide (and) Alumina (and) Glycerin (and)	
Silica (UV-Titan M212)	8.00
B: Lecithin	1.00
Lanolin Alcohol	1.50
Glyceryl Stearate	0.80
Isopropyl Palmitate	4.00
Stearic Acid	0.50
Caprylic/Capric Triglycerides	4.00
Isoeicosane (Permethy1 102A)	7.50
Polyisobutene (Permethy1 104A)	2.50
Isostearic Acid	2.40
Propylparaben	0.10
C: Imidazolidinyl Urea	0.20
D: Triethanolamine 99%	1.62
Polyglycerylmethacrylate	3.00

Procedure:

Weigh the Part A water into a suitable vessel and mix with a homogenizer operating at 5000 rpm. Dry blend the Veegum and cellulose gum, add the mixture to the water and continue mixing for 30 minutes at 5000 rpm, while heating the batch to 70-72C. Add the remaining Part A ingredients in order, mixing each until uniformly dispersed. Mix the Part B ingredients in another vessel and heat to 75C. Add Part B to Part A and mix for 10 minutes at 5000 rpm. Move the batch to a propeller mixer and adjust the speed to create a small vortex. Begin cooling while mixing. At 60C, add Part C. At 40C, add the Part D ingredients in order. Package at ambient temperature.

SOURCE: R.T. Vanderbilt Co., Inc.: Formulation from Presperse, Inc.

Sunscreen Formulation

<u>Ingredients:</u>	<u>Wt. %</u>
Veegum Plus	2.00
Deionized Water	61.50
Triethanolamine	0.80
Propylene Glycol	5.00
Emulsifying Wax NF	3.20
Stearic Acid	2.40
PPG-2 Myristyl Ether Propionate	11.20
Cetyl Alcohol	1.60
Lanolin Alcohol	4.00
Padimate O	5.00
Phenylbenzimidazole Sulfonic Acid	2.30
Preservative	1.00

Brookfield Viscosity @ 12 rpm, cps:

After Aging 1 Day: 19500

After Aging 1 Week: 19500

After Aging 4 Weeks: 21500

Yield Value, Dynes/Sq. Cm.: 1020

Formula pH:

After Aging 1 Day: 6.6

After Aging 1 Week: 6.5

After Aging 4 Weeks: 6.5

Stability Observations:

After Aging 1 Week @ Room Temp.: OK

After Aging 4 Weeks @ Room Temp.: OK

After Aging 1 Week @ 6C: OK

After Aging 4 Weeks @ 6C: OK

After Aging 1 Week @ 38C: OK

After Aging 4 Weeks @ 38C: OK

After Aging 1 Week @ 50C: OK

After Aging 4 Weeks @ 50C: OK

SOURCE: R.T. Vanderbilt Co., Inc.: Suggested Formulation

Sunscreen Formulation

<u>Ingredients:</u>	<u>Wt%</u>
MAS Type 1A	2.00
Deionized Water	61.50
Triethanolamine	0.80
Propylene Glycol	5.00
Emulsifying Agent NF	3.20
Stearic Acid	2.40
PPG-2 Myristyl Ether Propionate	11.20
Cetyl Alcohol	1.60
Lanolin Alcohol	4.00
Padimate O	5.00
Phenylbenzimidazole Sulfonic Acid	2.30
Preservative	1.00

Brookfield Viscosity @ 12 rpm, cps:

After Aging 1 Day: 11500
 After Aging 1 Weeks: 10500
 After Aging 4 Weeks: 13500

Yield Value, Dynes/Sq. Cm.: 600

Formula pH:

After Aging 1 Day: 6.6
 After Aging 1 Week: 6.6
 After Aging 4 Weeks: 6.6

Stability Observations:

After Aging 1 Week @ Room Temp.: OK
 After Aging 4 Weeks @ Room Temp.: OK

After Aging 1 Week @ 6C: OK
 After Aging 4 Weeks @ 6C: OK

After Aging 1 Week @ 38C: OK
 After Aging 4 Weeks @ 38C: Trace Bleed

After Aging 1 Week @ 50C: 5mm Bleed
 After Aging 4 Weeks @ 50C: Total Separation

SOURCE: R.T. Vanderbilt Co., Inc.: Formulation

Sunscreen Gel**Formulating Design and Advantages:**

Cera Bellina (Pg-3 Beeswax) produces a non-granular, low penetration and high stability gel. This formula utilizes an array of oils and actives producing a product with a non-greasy skin feel, penetrates the skin quickly and has an SPF of 4 to 6.

Raw Materials:Oil Phase:

	<u>Wt%</u>
Sweet Almond Oil	29.0
Cera Bellina (Pg-3 Beeswax)	15.3
Isopropyl Palmitate	15.0
Jojoba Oil	13.0
Sesame Oil	9.0
Avocado Oil	9.0
Cetyl Stearyl Alcohol	4.0
Escalol 507	4.0
Ozokerite 160/164	1.0
Carnauba #1 Yellow	0.5
Vitamin A Palmitate	0.1
Vitamin E Concentrate	0.1

Procedure:

Weigh and add each component of the oil phase to a vessel. Heat, not exceeding 75C, and mix until homogeneous. Reduce temperature to 60C and pour into container.

Adaptation of Formula and its Influence on the Product:

By replacing the jojoba, sesame and avocado oils with light mineral oil (28.8%) and increasing the Cera Bellina concentration (17.5%), one can produce the same product as described above. The formulator has the ability to substitute their preferred oils with only slight concentration changes of Cera Bellina to produce products of the same consistency. Orange Wax (Koster Keunen) can be added to naturally enhance the SPF.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Sunscreen Gel SPF 10
(Aqueous)

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Phenylbenzimidazole Sulfonic Acid (% as acid)/ Eusolex 232	4.00
Triethanolamine (99%)	2.18
Allantoin/Rona	0.10
Glycerine	5.00
Methyl Paraben	0.20
Deionized Water	14.77
Phase B:	
Imidazolidinyl Urea/Germall 115	0.15
Deionized Water	1.00
Phase C:	
Carbomer/Carbopol 940	1.50
Deionized Water	58.10
Phase D:	
Triethanolamine (99%)	3.00
Deionized Water	10.00

Procedure:

To neutralize Eusolex 232 dissolve triethanolamine in the water of phase A and add Eusolex 232 while stirring. When uniform, add the remaining ingredients of phase A. Heat to 70C until homogeneous then cool to 45C while stirring. Dissolve Germall 115 in the water of phase B, add to batch. Combine phase C and homogenize. Combine phase D. Add phase D to phase C with side sweep agitation until homogeneous. Add phase A and homogenize.

Notes:

Stability RT-No separation after 2 years.

SOURCE: Rona/EM Industries, Inc.: Formula EUS1-5-1

Sunscreen Gel SPF 10
(Aqueous-Alcoholic)

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Phenylbenzimidazole Sulfonic Acid (% as acid)/ Eusolex 232	4.00
Triethanolamine (99%)	2.18
Allantoin/Rona	0.10
Glycerine	5.00
Methyl Paraben	0.20
Deionized Water	1.00
Phase B:	
Imidazolidinyl Urea/Germall 115	0.15
Deionized water	1.00
Phase C:	
Carbomer/Carbopol 940	1.50
Deionized Water	50.87
Phase D:	
Triethanolamine (99%)	3.00
Deionized Water	5.00
Phase E:	
Ethanol (90%)	20.00

Procedure:

To neutralize Eusolex 232 dissolve triethanolamine in the water of phase A and add Eusolex 232 while stirring. When uniform add the remaining ingredients of phase A. Heat to 70C until homogeneous, then cool to 45C while stirring. Dissolve Germall 115 in the water of phase B, add to batch. Combine Phase C and homogenize. Combine phase D. Add phase E step by step while stirring, proceeding with each addition after it is clear and uniform. Add phase A and homogenize.

SOURCE: Rona/EM Industries, Inc.: Formula EUS1-5-2

Sunscreen Lotion**Formulating Design and Advantages:**

This formula demonstrates the rheological and stabilizing properties of Cera Bellina. Incorporated into this formula is the sunscreen Escalol (Octyl Dimethyl PABA) giving this formula an approximate SPF value of 4 to 6. The product has high gloss and excellent skin feel. The rheological properties of Cera Bellina allow for this product to be packaged in convenient tubes or squeeze bottles.

<u>Raw Materials:</u>	<u>Wt%</u>
Oil Phase:	
Escalol 507	5.63
Amerchol L 101	4.70
Cera Bellina (Pg-3 Beeswax)	3.80
Glycerol Monostearate	2.77
Light Mineral Oil	2.83
Isostearic Acid	1.00
Water Phase:	
Water (Distilled)	71.66
1,3-Butylene Glycol	2.90
Glycerine	2.83
Triethanolamine	0.80
Germaben II	0.80
Carboxymethyl Cellulose	0.28

Procedure:

Heat the water phase to 75C under agitation ensuring that the entire phase is solubilized. Melt and mix the oil phase at 75C. Slowly add the oil phase to the water phase under vigorous agitation. Allow to cool to 35C and pour into jars.

Adaptation of Formula and its Influence on the Product:

It is easy to alter the sunscreen to suit your preference, without changing the consistency. The emulsion viscosity can easily be altered by changing the oil and/or wax concentration. Orange Wax (Koster Keunen) can be added to naturally enhance the SPF.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Sunscreen Lotion (SPF 15*)

<u>Ingredients:</u>		<u>Wt%</u>
A Octyl dimethyl PABA		7.0
Benzophenone-3		3.0
Petrolatum		25.0
Dimethicone		3.0
Brij 721		1.2
Brij 72		3.8
B Water		46.6
Carbomer 934		0.2
C Water		10.0
Sodium hydroxide solution, 10% aqueous		0.2

Preparation:

Disperse Carbomer in water. Heat (A) to 65C. Heat (B) to 60C. Add (B) to (A) slowly with propeller agitation. Add (C) and stir until uniform. Cool to 35C and add make-up water.

Formula UV-5

Waterproof Sunscreen Cream (SPF 19*)

<u>Ingredients:</u>		<u>Wt%</u>
A Octyl methoxycinnamate		7.5
Octyl dimethyl PABA		8.0
Benzophenone-3		5.0
Octyl palmitate		5.0
Arlamol E		3.0
Brij 72		2.0
Arlacel 83 Sorbitan Sesquioleate		1.0
B Water		58.1
Carbomer 1342		0.2
C Water		10.0
Triethanolamine		0.2

Preparation:

Disperse Carbomer in water. Heat (A) to 65C. Heat (B) to 60C. Add (B) to (A) slowly with propeller agitation. Add (C) and stir until uniform. Cool to 50C and add make-up water. Pour above set point.

*Estimated Sun Protection Factor

Formula UV-8

SOURCE: ICI Americas: Suggested Formulations

Sunscreen Moisturizing Cream**Formulating Design and Advantages:**

This formula demonstrates the rheological and stabilizing properties of Cera Bellina. Incorporated into this formula is the sunscreen Escalol (Octyl Dimethyl PABA) giving this formula an approximate SPF value of 4 to 6. The cream has high gloss and excellent skin feel.

<u>Raw Materials:</u>	<u>Wt%</u>
Oil Phase:	
Cera Bellina (Pg-3 Beeswax)	6.0
Minosil	6.0
Escalol 507	5.1
Amerchol L 101	5.0
Castor Oil	3.0
Glycerol Monostearate	2.0
Isopropyl Palmitate	2.0
Ozokerite 160/164	1.0
Silicone Fluid 245	1.0
Propyl Paraben	0.2
Water Phase:	
Water (Distilled)	65.3
Butylene Glycol	2.9
Sodium Borate	0.2
Methyl Paraben	0.3

Procedure:

Heat the water phase to 75C under agitation ensuring that the entire phase is solubilized. Heat and mix the oil phase until homogeneous and a temperature of 75C is maintained. Slowly add the oil phase to the water phase under vigorous stirring. Allow to cool to 35C and pour into jars.

Adaptation of Formula and its Influence on the Product:

It is easy to alter the sunscreen to suit your preference, without changing the consistency. The emulsion viscosity can easily be altered by changing the oil and/or wax concentration. Orange Wax (Koster Keunen) can be added to naturally enhance the SPF.

SOURCE: Koster Keunen Inc.: Suggested Formulation

Sunscreen (O/W) Lotion SPF 16

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Octocrylene/Eusolex OCR	7.00
Isopropyl Myristate/Lexol IPM-NF	4.00
C12-15 Alcohols Benzoate/Finsolv TN	4.00
Cetyl Alcohol/Crodacol C-70	1.80
Steareth-2/Brij 72	2.00
Steareth-21/Brij 721	2.50
Dimethicone/Dow Corning 200 Fluid 100cST	0.50
Phase B:	
Deionized Water	53.20
Triethanolamine (99%)	2.00
Carbomer (2% aq. solution)/Carbopol ETD 2020	20.00
Phenylbenzimidazole Sulfonic Acid (% as acid)/ Eusolex 232	2.00
Phase C:	
Phenoxyethanol (and) Isopropylparaben (and) Isobutyl- paraben (and) Butylparaben/LiquaPar PE	1.00

Procedure:

Prepare Phase B by combining water, triethanolamine, and Eusolex 232. Heat the mixture to 50C while stirring until Eusolex 232 is completely dissolved. Add 2% carbomer solution. Stir and heat to 65C. If crystals are observed, add a few drops of triethanolamine and continue mixing and heating until no crystals remain. Combine the ingredients of Phase A. Stir and heat to 70C. Add Phase B to Phase A while gently stirring. Homogenize gently with minimal aeration. When mixture temperature cools to 50C add Phase C and continue to homogenize until mixture is homogeneous. Stir gently allowing mixture to reach room temperature.

Note:

Viscosity: 24,000 cps (Brookfield RV#5, 10 rpm @ 25C)
 Stability Freeze/Thaw: No separation after 5 cycles
 Stability 50C: No separation after 3 months

SOURCE: Rona/EM Industries, Inc.: Formula EUS5-26

Sunscreen (O/W) Lotion SPF 17INCI Name/Trade Name:Wt%

Phase A:

Octyl Methoxycinnamate/Neo Heliopan AV	7.00
Isopropyl Myristate/Lexol IPM-NF	4.00
C12-15 Alcohols Benzoate/Finsolv TN	4.00
Cetyl Alcohol/Crodacol C-70	2.30
Steareth-2/Brij 72	2.00
Steareth-21/Brij 721	2.50
Dimethicone/Dow Corning 200 Fluid 100 cST	0.50

Phase B:

Deionized Water	52.70
Triethanolamine (99%)	2.00
Carbomer (2% aq. solution)/Carbopol ETD 2020	20.00
Phenylbenzimidazole Sulfonic Acid (% as acid)/ Eusolex 232	2.00

Phase C:

Phenoxyethanol (and) Isopropylparaben (and) Isobutyl- paraben (and) Butylparaben/LiquaPar PE	1.00
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Procedure:

Prepare Phase B by combining water, triethanolamine, and Eusolex 232. Heat the mixture to 50C while stirring until Eusolex 232 is completely dissolved. Add 2% carbomer solution. Stir and heat to 65C. If crystals are observed, add a few drops of triethanolamine and continue mixing and heating until no crystals remain. Combine the ingredients of Phase A. Stir and heat to 70C. Add Phase B to Phase A while gently stirring. Homogenize gently with minimal aeration. When mixture temperature cools to 50C add Phase C and continue to homogenize until mixture is homogeneous. Stir gently allowing mixture to reach room temperature.

Note:

Viscosity: 29,600 cps (Brookfield RV#5, 10 rpm @ 25C)
 Stability Freeze/Thaw: No separation after 5 cycles
 Stability 50C: No separation after 3 months

SOURCE: Rona/EM Industries, Inc.: Formula EUS5-10

Sunscreen (W/O) Lotion SPF 20
Broad Spectrum UVA/UVB Protection

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Octyl Stearate/Crodamol OS	7.00
Joboba (buxus chinensis)oil/Floraesters Jojoba Oil	4.00
Caprylic/capric Triglycerides/Myritol 318	4.00
Petrolatum/Ultima White	3.00
Cyclomethicone/Dow Corning 344 Fluid	3.00
Dimethicone/Dow Corning 200 fluid 100 cST	2.00
PEG-30 Dipolyhydroxystearate/Arlacel P135	2.50
Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone	
Copolyol (and) Hexyl Laurate/Abil WE-09	2.50
Cetearyl Alcohol (and) Cetearyl Phosphate/Crodafos CES	1.00
Ceresin Wax/White Ceresine 1502	0.50
Phase B:	
Deionized Water	55.30
Propylene Glycol	3.00
Allantoin/Rona	0.20
Phenylbenzimidazole Sulfonic Acid (% as acid)/Eusolex 232	3.50
Triethanolamine (99%)	3.00
Phase C:	
Titanium Dioxide/Eusolex T-2000	5.00
Phase D:	
(Isopropyl paraben, Isobutyl paraben, n-Butyl paraben, Phenoxyethanol)/LiquaPar PE	0.50

Procedure:

Combine phase A. Heat to 75C with propeller mixer agitation until homogeneous. Add phase C to A. Cool mixture to 60C. Combine and heat phase B to 60C while stirring. Continue stirring until solids are fully dissolved. Slowly add phase B to A/C while stirring. Add phase D to A/B/C. Homogenize at moderate speeds to avoid aeration until temperature cools to 35C. Stir slowly allowing mixture to reach room temperature.

Note:

Viscosity:16,000 cps (Brookfield RV#5, 10 rpm @ 25C)
 Stability Freeze/Thaw: No separation after 5 cycles
 Stability 50C: No separation after 2 months

SOURCE: Rona/EM industries, Inc.: Formula EUS5-68

Sunscreen (W/O) Lotion SPF 23
Broad Spectrum UVA/UVB Protection

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Octyl Stearate/Crodamol OS	4.00
Octyl Methoxycinnamate/Neo Heliopan AV	7.00
Caprylic/capric Triglycerides/Myritol 318	4.00
Petrolatum/Ultima white	3.00
Cyclomethicone/Dow Corning 344 Fluid	3.00
Dimethicone/Dow Corning 200 Fluid 100cST	2.00
PEG-30 Dipolyhydroxystearate/Arlacel P135	2.50
Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone	
Copolyol (and) Hexyl Laurate/Abil WE-09	2.50
Cetearyl Alcohol (and) Cetearyl Phosphate/Crodafos CES	1.00
Ceresin Wax/White Ceresine 1502	0.50
Phase B:	
Deionized Water	61.30
Propylene Glycol	3.00
Allantoin/Rona	0.20
Sodium Chloride	0.50
Phase C:	
Titanium Dioxide/Eusolex T-2000	5.00
Phase D:	
(Isopropyl paraben, Isobutyl paraben, n-butyl paraben, phenoxyethanol)/LiquaPar PE	0.50

Procedure:

Combine phase A. Heat to 75C with propeller mixer agitation until homogeneous. Add phase C to A. Cool mixture to 65C. Combine and heat phase B to 55C while stirring. Continue stirring until solids are fully dissolved. Slowly add phase B to A/C while stirring. Add phase D to A/B/C. Homogenize at moderate speeds to avoid aeration until temperature cools to 35C. Stir slowly allowing mixture to reach room temperature.

Note:

Viscosity: 22,400 cps (Brookfield RV#5, 10 rpm @ 25C)
 Stability Freeze/Thaw: No separation after 5 cycles
 Stability at 50C: No separation after 3 months

SOURCE: Rona/EM Industries, Inc.: Formula EUS5-66

Sunscreen (W/O) Lotion SPF 30
Waterproof Broad Spectrum UVA/UVB Protection
 Static SPF 33
 Waterproof SPF 30

<u>INCI Name/Trade Name:</u>	<u>Wt%</u>
Phase A:	
Octyl Stearate/Crodamol OS	7.00
Octocrylene/Eusolex OCR	7.00
Caprylic/capric Triglycerides/Myritol 318	5.00
Petrolatum/Ultima White	1.50
Cyclomethicone/Dow Corning 344 Fluid	3.00
Dimethicone/Dow Corning 200 Fluid 50cST	2.00
PEG-30 Dipolyhydroxystearate/Arlacel P135	2.00
Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone	
Copolyol (and) Hexyl Laurate/Abil WE-09	2.00
Cetearyl Alcohol (and) Cetearyl Phosphate/Crodafos CES	1.00
Phase B:	
Deionized Water	57.40
Propylene Glycol	3.00
Allantoin/Rona	0.20
Phenylbenzimidazole Sulfonic Acid (% as acid)/ Eusolex 232	2.00
Triethanolamine (99%)	2.00
Sodium Chloride	0.40
Phase C:	
Titanium Dioxide/Eusolex T-2000	4.00
Phase D:	
(Isopropyl paraben, Isobutyl paraben, n-butyl paraben, phenoxyethanol)/LiquaPar PE/ISP	0.50

Procedure:

Combine Phase A. Heat to 75C with propeller mixer agitation until homogeneous. Add Phase C to A. Cool mixture to 65C. Combine and heat Phase B to 55C while stirring. Continue stirring until solids are fully dissolved. Slowly add Phase B to A/C while stirring. Add Phase D to A/B/C. Homogenize at moderate speeds to avoid aeration until temperature cools to 35C. Stir slowly allowing mixture to reach room temperature.

Note:

Viscosity: 15,200 cps (Brookfield RV#5, 10 rpm @ 25C)
 Stability Freeze/Thaw: No separation after 5 cycles
 Stability 50C: No separation after 1 month

SOURCE: Rona/EM Industries, Inc.: Formula EUS6-14

Titanium Dioxide Based Water Resistant Sunscreen (SPF 22)

This smooth sunscreen lotion contains no "chemical" absorbers and delivers uniform, non-chalky waterproof protection. Pemulen TR-1 ensures high stability and allows for easy formulation of the lotion.

Ingredient/Trade Name:Wt%

Part A:

1. Deionized Water	67.10
2. Disodium EDTA	0.05
3. Hydroxypropyl Methylcellulose/Benece1 MP943PR	0.10
4. Aminomethyl Propanol/AMP-95	0.25
5. Propylene Glycol	5.00

Part B:

6. C12-15 Alcohols Benzoate/Finsolv TN	3.00
7. Butyl Stearate	3.00
8. Myristyl Myristate/Ceraphyl 424	4.00
9. Sorbitan Oleate	0.10
10. Acrylates/C10-30 Alkyl Acrylates Crosspolymer/ Pemulen TR-1	0.20
11. Carbomer/Carbopol Ultrez 10	0.20

Part C:

13. Octyl Palmitate (and) Titanium Dioxide/Tioveil OP	15.00
14. Polyglyceryl-10 Decaoleate/Capmul 10G-10-0	1.00

Properties:

Appearance: White, thick, creamy emulsion

pH: 6.2-6.8

Viscosity (cP): 32,000-38,000

Preparation Procedure:

1. Combine Part A ingredients in a vessel which will contain the entire formulation. Heat to 50C.
2. In a separate vessel, combine first four Part B ingredients. Heat to 65C. After mixture is uniform, disperse resins. Mix until uniform.
3. Using rapid agitation, add Part B to Part A. Mix to form a smooth, viscous emulsion.
4. Combine Part D ingredients and mix well.
5. Add Part C to batch.
6. Using moderate agitation, slowly add Part D to the emulsion. Slowly cool lotion using continued moderate agitation.

SOURCE: B.F. Goodrich Co.: Formulation P0049

Waterproof Sunscreen Cream**Concept Statement:**

An elegant waterproof sunscreen cream containing Pationic SCL to moisturize and smooth skin, and SOD Vegetable and Defensine to detoxify, repair and protect the skin.

Ingredients:

	<u>Wt%</u>
1. Pationic SCL (Sodium Cocoyl Lactylate)	0.50
2. Rita Cetearyl Alcohol 50/50 (Cetearyl Alcohol)	1.60
3. Rita GMS (Glyceryl Stearate)	4.00
4. Titanium Dioxide (Micro)	4.00
5. Methyl Anthranilate	5.00
6. C12-C16 Alkyl Benzoate	7.50
7. PVP/Eicosene Copolymer	0.50
8. Distilled/Deionized Water	68.10
9. Acritamer 941 (Carbomer)	0.20
10. Propylene Glycol	3.00
11. DMDM Hydantoin	2.00
12. NaOH (20% Solution)	q.s.
13. SOD Vegetable (Superoxide Dismutase)	2.40
14. Defensine (Wheat Germ Extract)	3.00
15. Fragrance	q.s.
16. D&C Red No. 33	q.s.

Compounding Procedure:

Disperse item 9 into item 8 and neutralize with item 12.
 Add item 10 and heat to 80C. Combine items 1-7 and heat to 80C.
 Add oil phase to water phase. Cool to 35C and items 13-16.

SOURCE: R.I.T.A. Corp.: LI Ref. No. 124-35B

Waterproof Suntan Lotion SPF 17

<u>Ingredient:</u>	<u>Wt%*</u>
A: Isostearic Acid	4.00
Cetyl Alcohol	1.00
DEA Cetyl Phosphate	2.00
Dimethicone	0.50
Octyl Methoxycinnamate (Parsol MCX)	7.50
Octyl Salicylate	4.00
Benzophenone-3 (Uvinul M-40)	2.00
Octyldodecyl Neopentanoate (Elefac I-205)	10.00
B: Deionized Water	63.00
Veegum, Magnesium Aluminum Silicate	0.75
Rhodigel, Xanthan Gum	0.25
Glycerin	4.00
C: Propylene Glycol (and) Diazolidinyl Urea (and)	
Methylparaben (and) Propylparaben	1.00

Procedure:

Weigh the water into a suitable vessel and heat to 85C. Dry and blend the Veegum and Rhodigel and add them to the water while mixing with a homogenizer at 5000 rpm. Continue mixing for 20 minutes. Add the remaining Part B ingredient and mix 3 minutes. Weigh and mix the Part A ingredients in another vessel and heat them to 85C. Add Part A to Part B and mix for 10 minutes at 5000 rpm. Move the batch to a propeller mixer and adjust the speed to create a small vortex. Begin cooling while mixing slowly. At 40C, add Part C. Continue cooling and package at 35C.

*As received basis

SOURCE: R.T. Vanderbilt Co., Inc.: Formulation from Bernel Chemical Co., Inc.

Moisturizing Sunscreen

<u>Ingredient:</u>	<u>Wt%</u>
Part A:	
Monafax MAP-160	1.0
Phospholipid SV	2.5
KOH (45%)	0.4
Germaben II	0.4
Titanium Dioxide	0.4
Water	77.0
Monasil PDM	1.0
Part B:	
Cetyl Alcohol	2.0
C12-15 Alkyl Benzoates	2.0
Isopropyl Palmitate	2.3
Dimethicone	1.0
Octyl Methoxycinnamate	6.0
Methyl Anthranilate	3.0
Steareth-2	1.0

Procedure:

- 1) Heat A & B separately to 65C.
- 2) Slowly add B to A with homogenization and continue blending for an appropriate time. Adjust pH to 5.0 with citric acid.
- 3) Stir cool to 40-45C, add fragrance and package.

SOURCE: Mona Industries, Inc.: Suggested Formulation

Waterproof W/O Sunscreen Lotion
SPF-16

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone Copolyol (and) Hexyl Laurate (Abil WE-09)	5.0
Mineral Oil	5.0
Octyl Stearate (Tegosoft OS)	6.0
Cyclomethicone	4.0
Cetyl Dimethicone (Abil Wax 9801)	1.0
Isopropyl Myristate (Tegosoft M)	4.0
Hydrogenated Castor Oil	0.8
Microcrystalline Wax	1.2
Octyl Methoxycinnamate	3.0
Phase B:	
Water	69.2
Sodium Chloride	0.8
Preservatives	Q.S.
Phase C:	
Fragrance	Q.S.

Procedure:

1. Add the components of Phase A. Heat while mixing to 80C to incorporate the waxes. Cool to 50C.
2. Heat Phase B to 50C. Add B to A slowly with a low energy mixer. Maintain a smooth milky appearance at all times.
3. Cool to 35C with sweep mixer. Add fragrance.
4. Homogenize.

Cooling After Sun Lotion

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Polyglyceryl-3 Methylglucose Distearate (Tego Care 450)	2.0
Caprylic/Capric Triglycerides (Tegosoft CT)	6.5
Mineral Oil	5.7
Phase B:	
Glycerin	3.0
Water	71.4
Phase C:	
Mineral Oil	0.8
Carbomer 941	0.2
Ethanol	10.0
Phase D:	
Sodium Hydroxide (10% solution)	0.4
Phase E:	
Fragrance	Q.S.
Preservatives	Q.S.

Procedure:

1. Heat the ingredients of Phase A to 80C.
2. Heat the ingredients of Phase B to 80C. Add A to B or B to A without stirring.
4. Stir.
5. Disperse Carbomer into the oil/ester add to A/B.
- Homogenize.
6. Cool to 35-40C with stirring.
7. Add Ethanol.
8. Add phase D/E. Stir.
9. Mix until viscosity is correct.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Waterproof W/O Sunscreen Lotion
SPF 22

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone	
Copolyol (and) Hexyl Laurate (Abil WE-09)	5.0
Mineral Oil	5.0
Octyl Stearate (Tegosoft OS)	4.0
Cyclomethicone	4.0
Cetyl Dimethicone (Abil Wax 9801)	1.0
Isopropyl Myristate (Tegosoft M)	4.0
Almond Oil	2.0
Hydrogenated Castor Oil	0.8
Microcrystalline Wax	1.2
Octyl Methoxycinnamate	3.0
Phase B:	
Water	69.2
Sodium Chloride	0.8
Preservatives	Q.S.
Phase C:	
Fragrance	Q.S.

Procedure:

1. Add the components of Phase A. Heat while mixing to 80C to incorporate the waxes. Cool to 50C.
2. Heat Phase B to 50C. Add B to A slowly with a low energy mixer. Maintain a smooth milky appearance at all times.
3. Cool to 35C with sweep mixer. Add fragrance. 4. Homogenize.

Water-In-Oil Sunscreen
SPF 26

<u>Ingredients:</u>	<u>Wt%</u>
Phase A:	
Cetyl Dimethicone Copolyol (and) Polyglyceryl-4	
Isostearate (and) Hexyl Laurate (Abil WE-09)	5.00
Cetyl Dimethicone (Abil Wax 9840)	0.25
Octyl Palmitate (Tegosoft OP)	1.25
Octyl Stearate (Tegosoft OS)	5.35
Mineral Oil	1.75
Beeswax	1.20
Hydrogenated Castor Oil	0.80
Phase B:	
Octyl Methoxycinnamate	5.00
Titanium Dioxide	5.00
Cyclomethicone	4.40
Phase C:	
Water	69.20
Sodium Chloride	0.80
Preservatives	Q.S.

Procedure:

1. Heat Phase A to 85C to melt and disperse waxes. 2. Cool Phase A to 50C. Add B to A slowly with a low energy mixer.
3. Roller mill to reduce particle size of Titanium Dioxide.
4. Cool to 50C. 5. Heat Phase C to 50C. Add Phase C to A/B slowly with low energy mixing. Maintain a smooth milky appearance at all times while mixing. 6. Cool to 35C and homogenize.

SOURCE: Goldschmidt Chemical Corp.: Suggested Formulations

Water Resistant Sunscreen Lotion

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
1. Deionized Water	62.60
2. Carbomer/Carbopol Ultrez 10	0.20
3. Deionized Water	20.00
4. Hydroxypropyl Methylcellulose/Methocel E4M	0.10
5. Polymethoxy Bicyclic Oxazolidine/Nuosept C	0.20
6. Disodium EDTA	0.05
Part C:	
7. Octyl Methoxycinnamate/Neo Heliopan, Type AV	7.00
8. Octyl Salicylate/Neo Heliopan, Type OS	3.00
9. Oxybenzone/Uvinul M-40	4.00
10. C12-15 Alcohols Benzoate/Finsolv TN	4.00
11. Acrylates/C10-30 Alkyl Acrylates Crosspolymer/ Pemulen TR-1	0.25
Part D:	
12. Aminomethyl Propanol/AMP-95	0.25
13. PEG-20 Almond Glycerides/Croval A-40	0.20
14. Fragrance/Fragrance #99189 "Twister"	0.14

Properties:

pH: 5.8-6.1

Viscosity (cP): 20,000-28,000

Appearance: Creamy white emulsion

Preparation Procedure:**Part A:**

1. Disperse Carbopol Ultrez 10 in deionized water (40-50C).

Part B:2. Disperse Methocel in deionized water in a separate vessel.
When uniform, add other Part B ingredients.

3. Add Part B to Part A.

Part C:4. Combine first four Part C ingredients in a separate vessel.
Heat mixture and mix until oxybenzone has dissolved.5. Cool Part C to 45C. Disperse Pemulen TR-1 in Part C. Mix
until polymer is dispersed well.6. With vigorous agitation, add Part C to Part A. Mix for 20
minutes or until a smooth, non-grainy dispersion is apparent.

7. Add AMP-95 to batch. Mix until a smooth product is obtained.

8. Add Croval A-40 and fragrance. Mix until uniform.

SOURCE: B.F. Goodrich Co.: Formulation P0052

Water-Resistant Sunscreen Lotion SPF 24

This high SPF sunscreen lotion provides long-lasting UV protection and has excellent water-resistant properties provided by Avalure AC 118 film forming polymer and Pemulen TR-2 polymeric emulsifier.

Ingredient/Trade Name:	Wt%
Part A:	
1. Deionized Water	66.10
2. Carbomer/Carbopol Ultrez 10 Polymer	0.25
3. Hydroxypropyl Methylcellulose/Methocel E4M	0.10
4. Propylene Glycol	1.00
5. Polymethoxy Bicyclic Oxazolidine/Nuosept C	0.40
6. Disodium EDTA	0.05
7. PEG-20 Almond Glycerides/Crovol A-40	0.40
Part B:	
8. Octyl Methoxycinnamate/Neo Heliopan, Type AV	7.50
9. Octyl Salicylate/Neo Heliopan, Type OS	5.00
10. Oxybenzone/Neo Heliopan, Type BB	6.00
11. C12-15 Alcohols Benzoate/Finsolv TN	5.00
12. Acrylates/C10-30 Alkyl Acrylate Crosspolymer/ Pemulen TR-2 Polymer	0.25
Part C:	
13. Aminomethyl Propanol/AMP-95	0.30
14. Acrylates Copolymer/Avalure AC 118 Polymer	7.50
15. Fragrance #99189 "Twister"	0.15

Properties:

Appearance: Milky white emulsion

pH: 6.0-6.5

Viscosity (cP): 18,000-24,000

SPF: 24

Stability: Passed 45C, accelerated 1 month

Passed freeze/thaw-3 cycles

Preparation Procedure:

1. Part A: Disperse Carbopol Ultrez 10 polymer and Methocel E4M in warm deionized water (40-50C). Reduce mixing speed after polymers are dispersed.
2. When uniform, add other Part A ingredients and mix until uniform.
3. Part B: Combine first four ingredients in Part B in a separate vessel. Heat and mix until oxybenzone has dissolved.
4. Cool Part B to 45C. Disperse Pemulen TR-2 in Part B and mix until well dispersed.
5. With vigorous agitation, add Part B to Part A. Mix for 20 minutes or until a smooth, non-grainy dispersion is apparent.
6. Add AMP-95 to batch, mix until a smooth product is obtained.
7. Add Avalure AC 118 and fragrance to batch. Mix until uniform.

SOURCE: BF Goodrich Specialty Chemicals: Formulation A0005

W/O Sunscreen Lotion

<u>Component:</u>	<u>Wt%</u>
I Dehymuls PGPH/Polyglyceryl-2 Dipolyhydroxystearate	3.0
Monomuls 90-018/Glyceryl Oleate	1.0
Myritol 318/Caprylic/Capric Triglyceride	6.0
Eutanol G/Octyldodecanol	6.0
Cetiol SN/Cetearyl Isononanoate	5.0
Copherol F 1250/Tocopheryl Acetate	1.0
Permulgin 2550/Beeswax (Cera Alba)	1.2
Neo Heliopan E1000/Isoamyl p-Methoxycinnamate	7.0
Zinc Oxide neutral	6.0
II Water	58.0
Glycerin 86%	5.0
III Phenonip/Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Propylparaben (and) Butylparaben	0.5
Perfume Oil	0.3
1. Melt the components listed under I at 80-85C and stir until homogeneous.	
2. Heat the components listed under II to 80-85C and add to phase I while stirring. Stir for 5 minutes at this temperature.	
3. Allow the emulsion to cool with stirring in such a way that it remains in continual motion. Avoid the incorporation of air. Homogenise at 65-55C by means of a suitable dispersion unit to improve both stability and structure. When fully homogeneous allow to cool to 30C with stirring. Addition of III at 30C.	

Formulation No.: HR1 LSF/SPF ca. 17 (DIN)

O/W Lotion with SPF 15

<u>Component:</u>	<u>Wt%</u>
I Emulgade PL 68/50/Cetearyl Glucoside (and) Cetearyl Alcohol	4.5
Cetiol SN/Cetearyl Isononanoate	10.0
Baysilon M 350/Dimethicone	0.5
Copherol F 1300/Tocopherol	2.0
Benzophenone-3	2.0
Octyl Methoxycinnamate	7.5
II Glycerin 86%	3.0
Water	65.4
III Carbopol 981 2%ig/Carbomer	5.0
IV KOH 20%ig	0.1
Viscosity 23C mPas: 15,000	
1. Heat oil phase to 80C. Heat aqueous phase to 80C and add to oil phase while stirring. Emulsify for 5 minutes at this temperature.	
2. Allow the emulsion to cool with stirring in such a way that it remains in continual motion without developing a so-called "stirring cone". Avoid incorporation of air. Excessive stirring, in particular below 50C, can lead to the reduction of the final viscosity.	
3. Add phase III, at 50C.	
4. At 40C neutralized with phase IV. Finish stirring at 30C.	
Note: During cooling, emulsion systems on the basis of Emulgade PL 68/50 can pass through distinct gel phase.	

Formulation No. 95/190/94

SOURCE: Henkel KGaA: Suggested Formulations

Zinc Oxide Sunscreen Cream (PABA/Oxybenzone Free)
Estimated SPF=20

<u>Ingredient:</u>	<u>Wt%*</u>
A: Octocrylene (Neo Heliopan 303)	7.00
Octyl Methoxycinnamate (Neo Heliopan AV)	7.50
Isocetyl Alcohol	2.00
Cetearyl Alcohol (and) Ceteareth-20	2.00
Glyceryl Stearate	3.00
PEG-40 Stearate	1.00
Dimethicone	1.00
Cetyl Alcohol	0.75
Tocopheryl Acetate	0.25
B: Zinc Oxide	6.00
C: Deionized Water	65.30
Veegum Ultra, Magnesium Aluminum Silicate	0.50
Rhodigel, Xanthan Gum	0.50
Propylene Glycol	2.00
Disodium EDTA	0.20
D: Propylene Glycol (and) Diazolidinyl Urea (and) Methylparaben (and) Propylparaben	1.00

Procedure:

Weigh the Part C water into a suitable vessel and mix with a propeller stirrer operating at 1800 rpm. Weigh and dry blend the Veegum Ultra and Rhodigel and add them to the water. Mix for 30 minutes at 1800 rpm. Add the remaining Part C ingredients in order and mix until uniform. Begin heating the water phase to 75C. Weigh the Part A ingredients into another vessel and heat to 75C. Add Part B to Part A and mix until uniform. Slowly add Parts A+B to Part C and homogenize at 5000 rpm until uniform. Transfer the batch to a propeller mixer and adjust the speed to produce a small vortex. Begin cooling. At 40C, add Part D. Continue mixing and cooling. Package at 25-28C.

SOURCE: R.T. Vanderbilt Co., Inc.: Formulation from Haarman & Reimer Corp.

Zinc Oxide Sunscreen (Measured SPF=9.2)

<u>Ingredient:</u>	<u>Wt%*</u>
A: Glyceryl Stearate	2.50
PEG-40 Stearate	0.75
Cetearyl Alcohol (and) Ceteareth-20	0.75
Tricontanyl PVP	2.00
Caprylic/Capric Triglycerides	5.00
Mineral Oil	5.00
Dimethicone	2.00
B: Zinc Oxide (Zinc Oxide Neutral)	10.00
C: Deionized Water	65.35
Veegum Ultra, Magnesium Aluminum Silicate	0.75
Rhodigel, Xanthan Gum	0.50
Propylene Glycol	5.00
Tetrasodium EDTA	0.10
D: DMDM Hydantoin (and) Iodopropynyl Butylcarbamate	0.20
Lactic Acid, 88%	0.10

Procedure:

Weigh the Part C water into a suitable vessel and mix with a propeller stirrer operating at 1800 rpm. Weigh and dry blend the Veegum Ultra and Rhodigel and add them to the water. Mix for 30 minutes at 1800 rpm. Add the remaining Part C ingredients in order and mix until uniform. Begin heating the water phase to 80C. Weigh the Part A ingredients into another vessel and heat to 80C. Add Part B to Part A and mix until uniform. Slowly add Parts A+B to Part C and homogenize at 5000 rpm until uniform. Transfer the batch to a propeller mixer and adjust the speed to produce a small vortex. Begin cooling. At 40C, add Part D. Continue mixing and cooling. Package at 25-30C.

*As received basis

SOURCE: R.T. Vanderbilt Co., Inc.: Formulation from Haarman & Reimer Corp.

Milk and Honey Sunscreen Stick

<u>Part:</u>	<u>Raw Material:</u>	<u>Wt%</u>
A	Monalac ML Milk Lipid	70.0
A	Bleached Beeswax	20.0
B	Octyl Dimethyl PABA	7.0
B	Benzophenone 3	3.0
C	Fragrance	qs

Procedure:

Melt and mix Part A ingredients 65C. Mix part B ingredients at ambient temperature, when clear add to Part A. Cool to 60C. Add fragrance, color, and antioxidants if desired. When well mixed pour off into containers. Product will solidify at about 55C. This product is an opaque, pale yellow solid with an approximate SPF value of 15.

SOURCE: Mona Industries, Inc.: Formulation F-721

Section XII

Miscellaneous

Bacitracin Ointment (O/W)

<u>Ingredients:</u>	<u>Wt%</u>
A. Stearic acid	15.0
Isopropyl Myristate	1.0
Arlacel 60 sorbitan monostearate	2.0
Tween 60 POE 20 sorbitan monostearate	1.5
B. Sorbitol 70% Solution USP	3.0
Water	71.5
C. Arlasolve DMI Dimethyl Isosorbide	5.0
Bacitracin	1.0
D. Preservative	q.s.

Preparation:

Add (B) to 72C to (A) at 70C. Agitate continuously until the emulsion reaches 50C. Stir in (C) until thoroughly mixed. Add (D). Stir until emulsion reaches 40C, replace lost water and package.

Hydrocortisone Ointment (O/W)

<u>Ingredients:</u>	<u>Wt%</u>
A. Cetyl alcohol	7.0
Arlacel 165 glycerol monostearate and poloxyethylene 100 stearate (acid-stable, self-emulsifying)	5.0
B. Sorbitol 70% Solution USP	5.0
Water	72.0
C. Arlasolve DMI Dimethyl Isosorbide	10.0
Hydrocortisone	1.0
D. Preservative	q.s.

Preparation:

Add (B) at 72C to (A) at 70C with good agitation. Add (C) at 50C and mix thoroughly. Add D. Stir until emulsion reaches 45C, replace lost water and package.

SOURCE: ICI Surfactants: Suggested Formulations

Children's Dentifrice Gel

Stage:	Ingredient:	Wt%
A	Glycerin	5.00
	CMC 9MXF	0.30
Using Cowles dissolver, add CMC to glycerin until well dispersed.		
B	Sorbitol (70%)	35.55
	Water	3.00
	Na Benzoate	0.50
	Na MFP	0.84
	Na Saccharin	0.20
	FD&C Blue #1 (1% soln)	0.15
Dissolve benzoate, MFP, and saccharin in water and sorbitol. Add color. Mix until dispersed.		
C	Add B to A using a homogenizer.	
	Allow mixture to heat to 50-60C.	
D	PEG 1450	5.00
	Sorbitol (70%)	25.00
Melt PEG. Mix with sorbitol at high speed. Add to C, while mixing. Maintain heat at 50-60C, and mix for 30 mins.		
E	Sylodent 750	5.00
	Sylodent 2	12.00
Transfer batch to vacuum, mixer. Mix for 20-30 mins. Heat may be applied if desired (30 to 40C).		
F	Flavor	1.00
Add and mix for one min.		
G	Sorbitol (70%)	5.00
	Na Lauryl Sulfate	1.50
Predisperse SLS in hot sorbitol. Add to batch with minimal dispersion. Pull 28" before starting mixer.		

SOURCE: Grace/Davison: Suggested Formulation

Clear Emollient Microemulsion (With AHA-Ester)

<u>Raw Materials:</u>		<u>Wt%</u>
A) Imwitor 380 (Glyceryl Cocoate/Citrate/Lactate)		30.00
Miglyol 812 (Caprylic/Capric Triglyceride)		20.00
Softigen 767 (PEG-6 Caprylic/Capric Glycerides)		30.00
Preservative		q.s.
Water	up to	100.00
B) Fragrance		q.s.

Preparation:

All ingredients are mixed together and stirred until homogeneous.

Formulation 1.5Y

Penetrating Massage Oil (With AHA-Ester)

<u>Raw Materials:</u>		<u>Wt%</u>
Imwitor 380 (Glyceryl Cocoate/Citrate/Lactate)		10.00
Miglyol 812 (Caprylic/Capric Triglyceride)		40.00
Miglyol 840 (Propylene Glycol Dicaprylate/ Dicaprinate)		20.00
Softigen 701 (Glyceryl Ricinoleate)		1.00
Mineral Oil		29.00
Antioxidants		q.s.

Preparation:

All ingredients are mixed together at about 40 degrees C.

Formulation 1.5Z

SOURCE: Creanova Inc.: Suggested Formulations

Emulsion, Type O/W

<u>Raw Materials:</u>	<u>Wt%</u>
A: Eumulglin VL 75	4.50
Lanette O	2.00
Monomuls 60-35C	1.00
Cetiol LC	4.00
Cetiol B	5.00
Cetiol PGL	1.00
Phenonip	0.30
B: Water, distilled	68.85
Phenonip	0.30
Glycerin	2.00
Carbopol 980	0.30
C: KOH 20%	0.75
D: Glycoderm (P)	10.00

Manufacture:

- A: Melt and bring to approx. 70C.
 B: Bring to approx. 70C and add to a) with stirring.
 Continue stirring until cooled to approx. 50C.
 C: Add.
 Continue stirring until cooled to approx. 30C.
 D: Stir in.
 Perfume, homogenize

SOURCE: Chemisches Laboratorium Dr. Kurt Richter GmbH: Suggested Formulation

Microgel, Soft

<u>Raw Materials:</u>	<u>Wt%</u>
A. Softigen 767 (PEG-6 Caprylic/Capric Glycerides)	29.00
Marlipal 1618/25 (Ceteareth-25)	15.00
IPM	5.00
B. Preservative	q.s.
Water ad	100.00
Perfume A 10 003 E Fragrance	0.30

Preparation:

A is brought to 70C, B is brought to the same temperature and emulsified into A. It is stirred down to 35C, then perfume is added.

SOURCE: Huls Aktiengesellschaft: Formulation HUKMGS

High Cleaning Dentifrice Gel

<u>Stage:</u>	<u>Ingredient:</u>	<u>Wt%</u>
A	Glycerin	5.00
	CMC 9MXF	0.30

Using Cowles dissolver, add CMC to glycerin until well dispersed.

B	Sorbitol (70%)	26.51
	Water	3.00
	Na Benzoate	0.50
	Na MFP	0.84
	Na Saccharin	0.20
	FD&C Blue #1 (1% soln)	0.15

Dissolve benzoate, MFP, and saccharin in water and sorbitol. Add color. Mix until dispersed.

C	Add B to A and mix using a homogenizer.	
	Allow mixture to heat to 50-60C.	

D	PEG 1450	5.00
	Sorbitol (70%)	21.00

Melt PEG. Mix with sorbitol at high speed. Add to C, while mixing. Maintain heat at 50-60C, and mix for 30 mins.

E	Sylodent 756	20.00
	Sylodent 2	8.50

Transfer batch to vacuum mixer. Mix for 20-30 mins. Heat may be applied if desired (30 to 40C).

F	Alcohol	1.50
	Flavor	1.00

Add and mix for one min.

G	Sorbitol (70%)	5.00
	Na Lauryl Sulfate	1.50

Predisperse SLS in hot sorbitol. Add to batch with minimal dispersion. Pull 28" before starting mixer.

SOURCE: Grace/Davison: Suggested Formulation

Insect Repellent Cream (W/O)
with UV-Filter

<u>Raw Materials:</u>		<u>Wt%</u>
A	Insect Repellent 3535 (Art.-No. 111887) (Ethyl Butyl-acetylaminopropionate)	20.00
B	Eusolex 6300 (Art.-No. 105385) (4-Methylbenzylidene Camphor)	3.00
	Dow Corning 3225C (Cyclomethicone (and) Dimethicone Copolyol)	12.00
	Dow Corning 344 (Cyclomethicone)	2.50
	Bentone paste SIL (Cyclomethicone (and) Stearalkonium Hectorite (and) SD Alcohol 40)	15.00
	Solvent ID (Isododecane)	7.30
	Witconol 14 (Polyglyceryl-4 Oleate)	2.50
	Beeswax, white (Art.-No. 111544) (Beeswax)	2.00
	Carnauba wax (Copernica Cerifera)	0.50
C	Sodium chloride (Art.-No. 106400)	2.00
	Propanediol-1,2 (Art.-No. 107478) (Propylene Glycol)	2.00
	Preservatives	q.s.
	Water, demineralized	ad 100.00

Procedure:

Mix phase C. Heat phase B to 80C, stir until clear and cool to 25C. Add phase A to phase B. Add phase C. Homogenize. As required add perfume.

Note:

Samples contain as preservatives

0.20% Euxyl K400

Formulation 14-04/F

Insect Repellent Lotion

<u>Raw Materials:</u>		<u>Wt%</u>
A	Insect Repellent 3535 (Art. No. 111887) (Ethyl Butyl-acetylaminopropionate)	20.00
	Polyethylene glycol 400 (Art. No. 817003) (PEG-8)	5.00
B	Ethanol 96% (Art. No. 100971)	35.00
	Water, demineralized	15.00
C	Polyethylene glycol 1500 (Art. No. 817005) (PEG-30)	4.00
D	Arlamol E (PPG-15 Stearyl Ether)	3.00
	Perfume oil Bariton (10607)	0.30
E	Water, demineralized	17.70

Procedure:

Blend phase D. Mix phase B and incorporate phases A, C, D and E while stirring.

Note:

pH22C=5.8

Formulation 10-01/F

SOURCE: Rona-Merck: Suggested Formulations

Men's Alcohol-Free Cologne

This sprayable product is light, elegant and will not sting the skin.

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
Deionized Water	91.58
DMDM Hydantoin/Glydant	0.30
Oleth-10/Brij 97	0.30
Part B:	
Cyclomethicone/245 Fluid	4.00
Isostearyl Benzoate	0.50
Acrylates/C10-30 Alkyl Acrylate Crosspolymer/ Pemulen TR-2	0.15
Part C:	
Propylene Glycol (and) Diazolidinyl Urea (and) Methyl- paraben (and) Propylparaben/Germaben IIE	1.00
Triethanolamine/TEA (99%)	0.12
Fragrance/"Polo Sport" type #A11518 or "Drakkar" type #F10091513	2.00
Disodium EDTA/Versene NA	0.05

Properties:

pH: 5.5-6.0

Viscosity (cP) at 25C: 600-900

Preparation Procedure:

1. Combine Part A ingredients in a vessel which will contain the entire formulation.
 2. Blend Part B ingredients in a separate vessel (ambient temperature). The Pemulen polymer should be slurried in this phase.
 3. With moderate agitation, add Part B to Part A. Mix for 10-20 minutes to allow polymer to swell. Add Germaben IIE and mix until uniform.
 4. Add TEA and mix vigorously to produce a smooth emulsion.
 5. Add fragrance to batch.
 6. Mix Disodium EDTA and emulsion incrementally to adjust viscosity downward to 600-900 cP to make product sprayable.
- (NOTE: Do not add more than a total of 0.1% or emulsion may separate.)

SOURCE: B.F. Goodrich Co.: Formulation P0059

Mineral Oil Emulsion Containing Ethanol

Formula SK-13 is a mineral oil cream with a luxurious after-feel. The alcohol provides a cooling effect as the cream spreads smoothly with good "rub-in" characteristics resulting in a non-greasy feel.

<u>Ingredients:</u>	<u>Wt%</u>
A Light mineral oil	8.00
Stearyl alcohol	1.00
Brij 721 Steareth-21	2.28
Brij 72 Steareth-2	1.72
B Water, deionized	66.00
Carbomer 934	0.40
C Sodium hydroxide solution, 10% aqueous	0.40
D Preservative	q.s.
E Perfume	0.20
F Ethanol, SDA-40 (190 proof)	20.00

Preparation:

Heat (A) to 70C and (B) to 72C. Add (B) to (A) slowly with moderate agitation. Add (C). Add (D) below 50C. Add (E) and (F) at 35C. Replace water lost by evaporation and package.
Formula SK-13

Hydrophilic Oil

<u>Ingredients:</u>	<u>Wt%</u>
Arlatone T	3.0
Arlamol E	6.0
Arlamol HD	20.0
Arlamol S7	4.0
Sunflower oil	20.0
Jojoba oil	5.0
Paraffin oil	42.0

Manufacture:

Simple room-temperature blending.

Comments:

Hydrophilicity of the oil can be altered by adjusting the concentration of Arlatone T.
Formula F44-12-3

SOURCE: ICI Surfactants: Suggested Formulations

Moderate Abrasivity Dentifrice Gel

<u>Stage:</u>	<u>Ingredient:</u>	<u>Wt%</u>
A	Glycerin	5.00
	CMC 9MXF	0.30
Using Cowles dissolver, add CMC to glycerin until well dispersed.		
B	Sorbitol (70%)	31.51
	Water	3.00
	Na Benzoate	0.50
	Na MFP	0.84
	Na Saccharin	0.20
	FD&C Blue #1 (1% soln)	0.15
Dissolve benzoate, MFP, and saccharin in water and sorbitol. Add color. Mix until dispersed.		
C	Add B to A and mix using a homogenizer. Allow mixture to heat to 50-60C.	
D	PEG 1450	5.00
	Sorbitol (70%)	25.00
Melt PEG. Mix with sorbitol at high speed. Add to C, while mixing. Maintain heat at 50-60C, and mix for 30 mins.		
E	Sylodent 750	10.00
	Sylodent 2	9.50
Transfer batch to vacuum mixer. Mix for 0-30 mins. Heat may be applied if desired (30 to 40C).		
F	Alcohol	1.50
	Flavor	1.00
Add and mix for one min.		
G	Sorbitol (70%)	5.00
	Na Lauryl Sulfate	1.50
Predisperse SLS in hot Sorbitol. Add to batch with minimal dispersion. Pull 28" before starting mixer.		

SOURCE: Grace/Davison: Suggested Formulation

Multiple Emulsion

I. Primary emulsion W/O:

<u>Ingredients:</u>	<u>Wt%</u>
A Arlamol HD, Isohexadecane	15.0
Caprylic/capric triglycerides	7.5
Arlamol E, PPG-15 stearyl ether	7.5
Arlacel P135, PEG-30 Dipolyhydroxystearate	4.0
B Water	65.6
Sodium chloride	0.4
Preservative	q.s.

Preparation-Primary Emulsion:

Heat (A) and (B) to 45C separately. Add (B) to (A) with propeller stirring. Homogenize mixture thoroughly. Propeller stir for 30 minutes.

II. Secondary emulsion W/O/W:

<u>Ingredients:</u>	<u>Wt%</u>
A Primary emulsion (W/O)	70.0
B Water	26.8
Synperonic PE/F/127 Poloxamer 407	2.0
C Carbopol 934, Carbomer	0.5
D Sodium chloride	0.2
E Preservative	q.s
F Triethanolamine	0.5

Preparation-Secondary Emulsion:

Dissolve Synperonic PE/F127 in water at 20C with stirring to produce (B). Sift (C) into (B) with fast stirring. Add (D) and (E) to (B)/(C) mixture with fast stirring. Slowly add (A) to (B)/(C)/(D)/(E) mixture. Add (F) with moderate stirring. Stir moderately fast for 15 minutes.

Comments:

Viscosity 505.2 cps

(Brookfield DV-1+/spindle 3/rpm 100)

Stability at	RT:	No separation after 1 month
	40C:	No separation after 1 month
	50C:	No separation after 1 month
	+5C:	No separation after 1 month
	-5/40C:	No separation after 1 month
	F/T:	No separation after 5 cycles

SOURCE: ICI Surfactants: Suggested Formulations

Peppermint Foot Scrub

<u>Ingredient/Trade Name:</u>	<u>Wt%</u>
Part A:	
Deionized Water	79.00
Carbomer/Carbopol Ultrez 10	0.25
Acrylates/C10-30 Alkyl Acrylate Crosspolymer/ Carbopol ETD 2020	0.40
Triethanolamine (99%)	0.16
Part B:	
TEA Lauryl Sulfate (40%)/Standapol T	4.00
Propylene Glycol	2.50
Part C:	
Glycerine	2.50
Peppermint (Mentha Piperita) Oil	0.10
Propylene glycol (and) Water (and) Matricaria (Chamomilla Recuita) Extract/Actiphyte Of Chamomile	0.05
Propylene glycol (and) Water (and) Ivy (Hedera Helix) Extract/Actiphyte of Ivy	0.05
Polymethoxy Bicyclic Oxadilidine/Nuosept C	0.20
Part D:	
Pumice	10.00
D&C Red No. 33 (0.1%)	0.35
Triethanolamine (99%)	0.44

Properties:

Color, Odor, Appearance: Light-red pumice suspension gel
 pH: 6.3-6.6
 Viscosity (cP): 18,000-20,000
 Brookfield Yield Value (dynes/cm²): 750-850
 Stability: Passed freeze/thaw-5 cycles
 Passed heat aging-30 days at 45C

Preparation Procedure:

1. Disperse Carbopol ETD 2020 and Ultrez 10 polymer in the deionized water. Continue stirring slowly to hydrate for about 20 minutes.
2. Partially neutralize the Carbopol dispersion with TEA in Part A and mix until smooth.
3. Add Part B to Part A with slow, sweep mixing to avoid foaming.
4. Pre-combine ingredients in Part C, and add Part C to Parts A/B. Mix slowly until homogeneous.
5. Add ingredients in Part D to Parts A/B/C, in order, mixing thoroughly between. Finish by adding remaining TEA to neutralize.

SOURCE: B.F. Goodrich Co.: Formulation C0065

Silicone Emulsion, Type W/O

<u>Raw Materials:</u>	<u>Wt%</u>
A: Miglyol Gel B (Caprylic/Capric Triglyceride (and) Stearalkonium Hectorite (and) Propylene Carbonate)	20.0
Imwitor 780K (Isostearyl Diglyceryl Succinate)	5.0
Imwitor 928 (Glyceryl Cocoate)	4.0
Abil WE 09 (Polyglyceryl-4 Isostearate (and) Cetyl Dimethicone Copolyol (and) Hexyl Laurate)	3.0
Dow Corning 200 Fluid (Dimethicone)	10.0
B: Magnesium Sulfate	2.0
Water up to	100.0
Preservative	q.s.
C: Perfume Oil	q.s.

Preparation:

"A" is mixed and heated to 75-80C. "B" is brought to the same temperature and emulsified into A. At about 30C, "C" is added.

Formula 1.2J

Silicone Emulsion, Type O/W

<u>Raw Materials:</u>	<u>Wt%</u>
A: Miglyol 812 (Caprylic/Capric Triglyceride)	10.0
Imwitor 370 (Glyceryl Stearate Citrate)	5.0
Imwitor 960K Flakes (Glyceryl Stearate SE)	5.0
Dow Corning 200 Fluid (Dimethicone)	10.0
B: Water, up to	100.0
Preservative	q.s.
C: Perfume Oil	q.s.

Preparation:

"A" is mixed and heated to 75-80C. "B" is brought to the same temperature and emulsified into A. At about 30C, "C" is added.

Formula 1.1K

SOURCE: Huls America Inc.; Suggested Formulations

Skin Soothing Ointment**Concept Statement:**

An emulsion-type ointment containing Supersat for emollience with the anti-irritation attributes of Pationic ISL and Ritaloe 1X.

Ingredients:

	Wt%
1. Petrolatum	45.70
2. Supersat (Hydrogenated Lanolin)	8.30
3. Ritabate-60 (Polysorbate-60)	3.50
4. Rita GMS (Glyceryl Stearate)	6.30
5. Pationic ISL (Sodium Isostearoyl Lactylate)	1.70
6. Distilled/Deionized Water	27.80
7. Ritaloe 1X (Aloe Vera Gel)	2.10
8. Ritapan D (Panthenol)	0.40
9. Propylene Glycol	4.20

Compounding Procedure:

Combine items 1-5 and heat to 70C. Combine items 6-9 and heat to 70C. Add to oil phase and mix until uniform.

Formulation Ref. No. 123-13

Lactylate Based Barrier Cream**Concept Statement:**

A rich barrier cream containing Ritaplast for its film-forming ability, and using Pationic emulsifiers for their added moisturizing properties.

Ingredients:

	Wt%
1. Petrolatum	20.00
2. Ritaplast (Mineral Oil and Polyethylene)	20.00
3. Shebu Refined (Shea Butter)	10.00
4. Rita SSO (Sunflower Seed Oil)	10.00
5. Rita IPP (Isopropyl Palmitate)	2.00
6. Pationic SBL (Sodium Behenoyl Lactylate)	3.00
7. Pationic CSL (Calcium Stearoyl Lactylate)	5.00
8. Propylparaben	0.10
9. Distilled/Deionized Water	29.80
10. Methylparaben	0.10

Compounding Procedure:

Combine items 1-8 and heat to 70C. Heat item 9 to 70C and add item 10. Add water to oil phase and mix until cool.

Formulation Ref. No. 123-15B

SOURCE: R.I.T.A. Corp.: Suggested Formulations

S.T. Tonic

<u>Raw Materials:</u>		<u>Wt%</u>
A: Cetyl octanoate		0.3
Parso1 MCX		0.15
Tocopheryl acetate		0.1
PEG-58 hydrogenated castor oil		2.0
Eldew CL-301		0.5
Butylparaben		0.1
B: Methylparaben		0.2
Butylene glycol		5.0
Marindew PC-100		0.05
Water	to make 100.0	

Procedure:

Heat (A) to 80C and (B) to 75C. Add (B) to (A) with homogenizing. Cool down to room temperature.

Features:

Very moisturizing and excellent touch. Eldew CL-301 is an excellent solubilizer for Vitamin E. No alcohol contained.

Formula No. EW-3040

S.T. Tonic

<u>Raw Materials:</u>		<u>Wt%</u>
A: Cetyl octanoate		0.3
Parso1 MCX		0.15
Tocopheryl acetate		0.1
PEG-58 hydrogenated castor oil		2.0
Eldew CL-301		0.5
Butylparaben		0.1
B: Methylparaben		0.2
Butylene glycol		5.0
Ajidew N-50		5.0
Water	to make 100.0	

Procedure:

Heat (A) to 80C and (B) to 75C. Add (A) to (B) with agitation. Cool down to room temperature.

Features:

Very moisturizing and emollient touch.

Formula No. EW-3050

SOURCE: Ajinomoto U.S.A., Inc.: Eldew CL-301 Applications

Stearyl Alcohol Formulation

<u>Ingredients:</u>		<u>Wt%</u>
A. Stearyl alcohol		2.0
Arlamol ISML, isosorbid monolaurate		3.0
Brij 721, POE (21) stearyl ether		1.1
Brij 72, POE (2) stearyl ether		0.4
B. Water		92.8
Carbomer 934		0.2
C. Sodium hydroxide (10% aqueous)		0.2
D. Preservative		0.1
E. Fragrance		0.2

Suggested Preparation:

Heat A to 70C and B to 72C. Add B to A slowly with moderate agitation. Add C. Add D below 60C. Add E below 40C. Add water to compensate for loss due to evaporation. Homogenize. Adjust pH to 5.5-6.5.

A similar effect occurs when a ratio of four parts cetyl alcohol is used with one part of Arlamol ISML emollient as shown in the following formula.

Stearyl Alcohol Formulation

<u>Ingredients:</u>		<u>Wt%</u>
A. Cetyl alcohol		4.0
Arlamol ISML, isosorbid monolaurate		1.0
Brij 721, POE (21) stearyl ether		1.3
Brij 72, POE (2) stearyl ether		0.2
B. Water		92.8
Carbomer 934		0.2
C. Sodium hydroxide (10% aqueous)		0.2
D. Preservative		0.1
E. Fragrance		0.2

Suggested Preparation:

Heat A to 70C and B to 72C. Add B to A slowly with moderate agitation. Add C. Add D below 60C. Add E below 40C. Add water to compensate for loss due to evaporation. Homogenize. Adjust pH to 5.5-6.5.

SOURCE: ICI Surfactants: Suggested Formulations

Washable Oil

<u>Ingredients:</u>	<u>%W/W</u>
Arlamol S3	80.00
Brij 30	10.00
Arlatone T	10.00

Procedure:

Mix well at room temperature.

Formula CP 1111

Washable Oil

<u>Ingredients:</u>	<u>%W/W</u>
Arlamol E	50.00
Atlas G73500	50.00

Procedure:

Mix well at room temperature.

Formula CP 1112

Washable Oil

<u>Ingredients:</u>	<u>%W/W</u>
Arlamol S3	60.00
Isopropyl palmitate	30.00
Brij 93	5.00
Brij 30	4.60
Water	0.40

Procedure:

Mix well at room temperature.

Formula CP 1115

Washable Oil

<u>Ingredients:</u>	<u>%W/W</u>
A Arlamol E	50.00
Atlas G73500	25.00
B Brij 30	20.00
C Dow Corning 344 cyclomethicone	5.00

Procedure:

Mix (B) well. Add (B) to (A) and mix well. Add (C) to (AB) and mix well.

Formula CP 1116

SOURCE: ICI Surfactants: Suggested Formulations

Section XIII
Trade-Named
Raw Materials

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Abil AV-20	Phenyl trimethicone	Goldschmidt
Abil B8839	Cyclomethicone	Goldschmidt
Abil B8851	Dimethicone copolyol	Goldschmidt
Abil B8852	Dimethicone copolyol	Goldschmidt
Abil B9950	Dimethicone Propyl-BG Betaine	Goldschmidt
Abil B88183	Dimethicone copolyol	Goldschmidt
Abil EM-90	Cetyl dimethicone copolyol	Goldschmidt
Abil EM-97	Dimethicone copolyol (and) cyclomethicone	Goldschmidt
Abil OSW 12	Cyclomethicone & dimethiconol & dimethicone	Goldschmidt
Abil Quat 3272 & 3474	Quaternium-80	Goldschmidt
Abil Wax 2434	Stearoxy dimethicone	Goldschmidt
Abil Wax 9801 & 9814	Cetyl dimethicone	Goldschmidt
Abil Wax 9840	Cetyl dimethicone copolyol & polyglyceryl-4 isostearate & hexyl laurate	Goldschmidt
Abil WE 09	Polyglyceryl-4 isostearate & cetyl dimethicone copolyol & hexyl laurate	Goldschmidt
Abil 50	Dimethicone	Goldschmidt
Acetulan	Cetyl acetate & acetylated lanolin alcohol	Amerchol
Acritamer 501E	Carbomer	RITA
Acritamer 940	Carbomer 940	RITA
Actiphyte of Chamomile	Botanical extract, "calming"	ActiveOrg
Actiphyte of Ivy	Botanical extract, "soothing"	ActiveOrg
Acylglutamate CA	Surfactant	Ajinomoto

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Abil AV-20	Phenyl trimethicone	Goldschmidt
Abil B8839	Cyclomethicone	Goldschmidt
Abil B8851	Dimethicone copolyol	Goldschmidt
Abil B8852	Dimethicone copolyol	Goldschmidt
Abil B9950	Dimethicone Propyl-BG Betaine	Goldschmidt
Abil B88183	Dimethicone copolyol	Goldschmidt
Abil EM-90	Cetyl dimethicone copolyol	Goldschmidt
Abil EM-97	Dimethicone copolyol (and) cyclomethicone	Goldschmidt
Abil OSW 12	Cyclomethicone & dimethiconol & dimethicone	Goldschmidt
Abil Quat 3272 & 3474	Quaternium-80	Goldschmidt
Abil Wax 2434	Stearoxy dimethicone	Goldschmidt
Abil Wax 9801 & 9814	Cetyl dimethicone	Goldschmidt
Abil Wax 9840	Cetyl dimethicone copolyol & polyglyceryl-4 isostearate & hexyl laurate	Goldschmidt
Abil WE 09	Polyglyceryl-4 isostearate & cetyl dimethicone copolyol & hexyl laurate	Goldschmidt
Abil 50	Dimethicone	Goldschmidt
Acetulan	Cetyl acetate & acetylated lanolin alcohol	Amerchol
Acritamer 501E	Carbomer	RITA
Acritamer 940	Carbomer 940	RITA
Actiphyte of Chamomile	Botanical extract, "calming"	ActiveOrg
Actiphyte of Ivy	Botanical extract, "soothing"	ActiveOrg
Acylglutamate CA	Surfactant	Ajinomoto

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Ampholyt JB 130K	Cocamidopropyl betaine	Huls
Antaron WP660		ISP
Antil 141L	Propylene glycol & PEG-55 propylene glycol oleate	Goldschmidt
Antil 171	PEG-18 glyceryl oleate/cocoate	Goldschmidt
Arlacel 40	Sorbitan monopalmitate	ICI
Arlacel 60	Sorbitan monostearate	ICI
Arlacel 83	Sorbitan sesquioleate	ICI
Arlacel 165	Glyceryl stearate & PEG-100 stearate	ICI
Arlamol E	PPG-15 stearyl ether	ICI
Arlamol HD	Isohexadecane	ICI
Arlamol M812	Emulsifying agent	ICI
Arlatone 980	PEG-35-hydrogenated castor oil	ICI
Arlatone 2121	Sunscreen agent	ICI
Arosurf 42-E6	Surfactant	Witco
Avanel S-30	Sodium C12-C15 pareth-3 sul- fonate	PPG
Avanel S-35CG	Sodium octoxynol-2 ethane sulfonate	PPG
Avanel S-150CGN	Sodium C12-15 pareth-15 sul- fonate	PPG
Avanel S-150CG	Sodium C12-15 pareth-15 sul- fonate	PPG

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Barley 1-3 Beta Glucan 70%		Keunen
Baysilon M350	Dimethicone	
Bee's Milk		Keunen
Bell Fragrance #J-2820, "Sporty"		Bell
Benecel MP943PR	Hydroxypropyl methylcellulose	Aqualon
Bentone Gel VS-5/PC	Rheological agent	Rheox
Bentone Paste SIL	Cyclomethicone & stearylalkonium hectorite & SD alcohol 40	Rheox
Bentone 38	Rheological agent	Rheox
Bentonite NFBC		
Bermocel E481		Whittaker
Bienenwachs 8100	Cera alba	Henkel
Biocare Polymer BHA-10	Substantive hyaluronic acid	Biomatrix
Bio-Terge AS-40	Alpha olefin sulfonate	Stepan
Brij 72	Steareth-2	ICI
Brij 97	Oleth-10	ICI
Brij 721	Steareth-21	ICI
Brooksme EPO	Lecithin & evening primrose oil moisturizer	Brooks
Butyl Cellosolve	Solvent	Union Carb
Candelilla Wax		Keunen
Capmul 10G-10-0	Polyglyceryl-10 decaoleate Dispersant/emulsifier	Karlshamms
Carbopol 934	Carbomer 934	BFGoodrich
Carbopol 940	Carbomer 940	BFGoodrich

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Carbopol 941	Carbomer 941	BFGoodrich
Carbopol 954	Carbomer 954	BFGoodrich
Carbopol 980	Carbomer 980	BFGoodrich
Carbopol 981	Carbomer 981	BFGoodrich
Carbopol 1342	Carbomer 1342	BFGoodrich
Carbopol 2984	Carbomer 2984	BFGoodrich
Carbopol 5984	Carbomer 5984	BFGoodrich
Carbopol ETD 2001	Carbomer	BFGoodrich
Carbopol ETD 2020	Acrylates/C10-30 alkyl acrylate crosspolymer. Preservative	BFGoodrich
Carbopol Ultrez 10	Carbomer thickener	BFGoodrich
Carbowax E-8000	PEG-150	Union Carb
Carbowax 600	PEG 600. Lubricant	Union Carb
Carnauba #1 Yellow		Keunen
Carnauba Wax		Keunen
Carsonol SLES-2	Sodium laureth sulfate	
Cartaretin F-4	Diethylenetriamine copolymer	Clariant
Castor oil	Ricinus communis	
Cara Bellina	PG-3 beeswax	Keunen
Ceraphyl 230	Emollient	ISP/Van
Ceraphyl 424	Myristyl myristate emollient	ISP/Van
Cerasynt IP	Emulsifier	ISP/Van
Cerasynt SD	Glyceryl stearate emulsifier	ISP/Van
Ceresine 130/135 Wax		Keunen
Ceresine 140/150 Wax		Keunen

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Cetiol	Oleyl oleate	Henkel
Cetiol B	Emollient esters	Henkel
Cetiol HE	PEG-7 glyceryl cocoate	Henkel
Cetiol J600	Oleyl erucate	Henkel
Cetiol LC	Coco-caprylate/caprate	Henkel
Cetiol OE	Dicaprylyl ether	Henkel
Cetiol PGL	Emollient esters	Henkel
Cetiol SB 45	Shea butter	Henkel
Cetiol SN	Cetearyl isononanoate	Henkel
Cetiol V	Decyl oleate	Henkel
Cetiol 868	Octyl stearate emollient	Henkel
CO-1695	Cetyl alcohol	
CO-1895	Stearyl alcohol	
Coco Soap (85-15)	Tallow	
Collapuron DAK	Desamidocollagen	
Comperlan KD	Cocamide DEA	Henkel
Completech MBAC-DS		Lipo
Controx KS		
Copherol F1250	Tocopheryl acetate	Henkel
Copherol F1300	Tocopherol	Henkel
Copherol 1250	Tocopherol	Henkel
Cosmedia Guar C-261	Guar gum	Henkel
Cosmedia Guar C-261N	Guar hydroxypropyl trimonium chloride	Henkel
Cosmedia Polymer HSP-1180		Henkel

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Cosmetic Brown 3277/1985/1654		
Cosmowax		Croda
Cremerol HMG	Hydroxylated milk glycerides	Amerchol
Cremophor HMG	PEG-35 castor oil	BASF
Crex	Sodium sesquicarbonate	
Crodamol MM	Myristyl myristate	Croda
Crovol A/Crovol A-40	PEG-20 almond glycerides	Croda
Crovol PK-70	PEG-45 palm kernel glycerides	Croda
Cutina CP	Cetyl palmitate	CLRichter
Dow Corning 200 Fluid Dimethicone		DowCorn
Dow Corning 200 Fluid, 100 cs		
Dow Corning 200 Fluid, 350 cs		
Dow Corning 200 Fluid, 5000 cs		
DC 344 Fluid	Cyclomethicone	DowCorn
DC 345 Fluid	Polydimethylcyclsiloxane	DowCorn
Degussa R812	Silica	Degussa
Dehymuls E	Mixed ester emulsifier	Henkel
Dehymuls PGPH	Polyglyceryl-2 dipolyhydroxy-stearate	Henkel
Dehyton AB30	Coco-betaine	Henkel
Dehyton G	Disodium cocoamphodiacetate	Henkel
Dehyton K	Cocamidopropyl betaine	Henkel
Deodorized Orange Wax		Keunen
Deosafe Perfume 75428 N/I		
Dermacare MS SE	Glyceryl monostearate	RhonePoul
DeSonic LFD-97		Witco

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
DeSonic 5N		Witco
Diaformer Z-A & Diaformer Z-AT Diaformer Z-SM Diaformer Z-W Diaformer Z-301 Diaformer Z-400	Methacrylol ethyl betaine/ Methacrylates copolymer	Clariant
Diahold A-503	AMP-Acrylates copolymer	Clariant
DL Panthenol		HoffmanLaRo
D- - Tocopherol Acetate: Tocopheryl acetate		
DNS Completech MBAC-EA		Lipo
Dowanol DPM & EB	Solvent	Dow
Dow Corning Q2-5324 Fluid	Dimethicone copolyol moistur- izer/lubricant	DowCorn
Dow Corning 190	Dimethicone copolyol	DowCorn
Dow Corning 556 Fluid	Phenyl trimethicone	DowCorn
Dow Corning 3225 C Fluid		DowCorn
Dowicil 200	Quaternium-15	Dow
Drakeol 9 & 21	Mineral oil	Penreco
"Drakkar" Type #F10091513	Fragrance	Haarman
Drivosol 35	Propane, isopropane, butane	Huls
Dynacerin 660	Oleyl erucate	Creanova
Eldew CL-301	Cholesteryl/behenyl/lactyl- dodecyl/lauroyl glutamate	Ajinomoto
Elfacos C26	Hydroxyoctacosanyl/hydroxy- stearate	Gallard-
Elfacos E200	Methoxy PEG-22/Dodecyl glycol copolymer	Gallard-
Elfacos ST9	PEG-45/Dodecyl glycol copolymer	Gallard-

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Elfugin AKT liq 300	Sodium C13-15 pareth-8 butyl phosphate & sodium C13-15 pareth-9 phosphate	Clariant
Emalex CC-168	Cetyl octanoate	Ajinomoto
Emalex GM-5	POE (5) glyceryl monostearate	Ajinomoto
Emalex GWIS-310	PEG-10 glyceryl triisostearate	Ajinomoto
Emalex GWIS-320	PEG-20 glyceryl triisostearate	Ajinomoto
Emalex HC-5	POE (5) hydrogenated castor oil	Ajinomoto
Emalex OD-25 JJ		Ajinomoto
Emalex O.T.G.		Ajinomoto
Emalex STG-R	Hydrogenated coco-glycerides	Ajinomoto
Emcol DG	Surfactant	Witco
Emcol 4100M	Surfactant	Witco
EmCon Limnathes Alba	Meadowfoam seed oil	Fanning
EmCon Tea Tree	Tea tree oil, active	Fanning
Emerest 2355	Ethylene glycol distearate	Henkel
Emersol 132	Triple pressed stearic acid	Henkel
Emersol 213	Low titer oleic acid (AV: 203)	Henkel
Emersol 221	Oleic acid (acid value: 203)	Henkel
Emery 531	Fatty acid	Henkel
Emery 610	Soya fatty acid	Henkel
Emery 621	Coconut fatty acid (av: 263)	Henkel
Emulgade PL 68/50	Cetearyl glucoside & cetearyl alcohol	Henkel
Emulgade SE	Cream base w/o	Henkel
Emulgator E2155	Stearyl alcohol, steareth-7, steareth-10	Goldschmidt

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Emulsifying Wax NF		Keunen
Escalol 507	Octyl dimethyl PABA	ISP/Van
Esi-Cryl 11	Styrene-acrylic copolymer	
Eumulgin B2	Ceteareth-20	Henkel
Eumulgin VL 75	Cosmetic emulsifier o/w	Henkel
Eumulgin 286	Cosmetic emulsifier o/w	Henkel
Euperlan PK-810	Pearlshine concentrate	Henkel
Euperlan PK 3000-AM	Glycol distearate, laureth-4, cocamidopropyl betaine	Henkel
Eusolex OCR	Octocrylene	RonaEM
Eusolex T-2000	Micron. titanium dioxide	RonaEM
Eusoflex 232	Phenylbezimidazole sulfonic acid	RonaEM
Eusolex 6007	Octyl dimethyl PABA	RonaEM
Eusolex 6300	4-Methylbenzylidene	RonaEM
Eusolex 9020	Butyl methoxydibenzoylmethane	RonaEM
Eutanol G	Octyldodecanol	Henkel
Extrapon Chamomile Special		Dragoco
Finester EH-25	C12-15 octanoate	
Finsolv EMG-20	Methyl gluceth-20 benzoate. Emollient	Finetex
Finsolv TN	C12-15 alcohols benzoate. Emollient	Finetex
Flora 91-2008	Fragrance	
Fragrance #A41073	Spicy floral fragrance	
Fragrance #A42017	Fruity floral fragrance	

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Fragrance #99189 "Twister"		Drom
Fragrance #J-7820, Sporty		Drom
Fruity Floral Scent NY-16 Fragrance		Novarone
G-2330		
Gelita Sol C	Hydrolyzed collagen	Hoechst
Genagen CAB	Cocamidopropyl betaine	Hoechst
Genapol AMG	Magnesium PEG-3 cocamide sulfate	Hoechst
Genapol L-3	Laureth-3	Hoechst
Genapol LRO Liquid	Sodium laureth sulfate	Hoechst
Genapol PMS	Glycol distearate	Hoechst
Genapol 122N	Soya sterol	Henkel
Germaben II & IIE	Cosmetic preservative	ISP/Sutton
Germall 115	Imidazoldiethyl urea	ISP/Sutton
Gluadin WQ	Laurdimonium hydroxypropyl hydrolyzed wheat protein	
Glucam E-10	Methyl gluceth-10	Amerchol
Glucam E-20	Methyl gluceth-20	Amerchol
Glucam P-10	PPG-10 methyl glucose ether	Amerchol
Glucamate DOE-120	PEG-120 methyl glucose dioleate	Amerchol
Glucamate SSE-20	PEG-20 methyl glucose sesqui- stearate	Amerchol
Glucate SS	Methyl glucose sesquistearate	Amerchol
Glucquat 125	Lauryl methyl gluceth-10 hydroxypropyldimonium chloride	Amerchol
Glycerol Monostearate		Keunen

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Fragrance #99189 "Twister"		Drom
Fragrance #J-7820, Sporty		Drom
Fruity Floral Scent NY-16 Fragrance		Novarone
G-2330		
Gelita Sol C	Hydrolyzed collagen	Hoechst
Genagen CAB	Cocamidopropyl betaine	Hoechst
Genapol AMG	Magnesium PEG-3 cocamide sulfate	Hoechst
Genapol L-3	Laureth-3	Hoechst
Genapol LRO Liquid	Sodium laureth sulfate	Hoechst
Genapol PMS	Glycol distearate	Hoechst
Genapol 122N	Soya sterol	Henkel
Germaben II & IIE	Cosmetic preservative	ISP/Sutton
Germall 115	Imidazoldiethyl urea	ISP/Sutton
Gluadin WQ	Laurdimonium hydroxypropyl hydrolyzed wheat protein	
Glucam E-10	Methyl gluceth-10	Amerchol
Glucam E-20	Methyl gluceth-20	Amerchol
Glucam P-10	PPG-10 methyl glucose ether	Amerchol
Glucamate DOE-120	PEG-120 methyl glucose dioleate	Amerchol
Glucamate SSE-20	PEG-20 methyl glucose sesqui- stearate	Amerchol
Glucate SS	Methyl glucose sesquistearate	Amerchol
Glucquat 125	Lauryl methyl gluceth-10 hydroxypropyldimonium chloride	Amerchol
Glycerol Monostearate		Keunen

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Hydrotriticum QM	Hair conditioner	Croda
Hydroxy Polyester		Keunen
Hypan SA-100H	Hydrogel	Lipo
Hampene Na3T	Trisodium EDTA	Hampshire
Hylacure		
Hystar CG	Hydrogenated starch hydrolysate	Lonza
Hystrene 5016	Stearic acid (triple pressed)	Witco
Imwitor 370	Glyceryl stearate citrate	Creanova
Imwitor 375	Glyceryl citrate/lactate/ linoleate/oleate	Creanova
Imwitor 380	Glyceryl cocoate/citrate/lactate	Creanova
Imwitor 780K	Isostearyl diglyceryl succinate	Creanova
Imwitor 900	Glyceryl stearate	Creanova
Imwitor 928	Glyceryl cocoate	Creanova
Imwitor 960K	Glyceryl stearate SE	Creanova
Incronam 30	Cocamidopropyl betaine	Croda
Insect Repellent 3535	Ethyl butyl acetyl amino prop- ionate	MGK
Isolan GI 34	Polyglyceryl-4 isostearate	Goldschmidt
J9262 Fragrance		Bell
Jaguar C13S	Guar gum	RhonePoul
Jojoba Oil	Jojoba (buxus chinensis) oil	

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Jordapon ACI-30G	Ammonium cocoyl isethionate	PPG
Jordapon CI Powder	Sodium cocoyl isethionate	PPG
Jordapon CI-UP	Sodium cocoyl isethionate	PPG
Jordapon CI-60	Sodium cocoyl isethionate (and) stearic acid	PPG
Jordapon CI-75	Sodium cocoyl isethionate (and) stearic acid	PPG
K80-D22		Keunen
Karion F Liquid	Sorbitol solution (70%)	E. Merck
Kathon CG	Methylchloroisothiazolinone (and) Methylisothiazolinone	Rohm & Haas
Kaydol	Mineral Oil USP	Witco
Kelco	Xanthan gum	Kelco
Keltrol	Xanthan gum	Kelco
Keltrol F	Xanthan gum	Kelco
Kelzan	Xanthan gum	Kelco
Kemester EGDS		
Kemester 99.7%	Glycerin	
Kerasol	Soluble animal keratin	Croda
Kessco PEG-6000	PEG-150 distearate	Stepan
Kester Wax K-48	Spermaceti	Keunen
Kester Wax-62		Keunen
Kukui Nut Oil		Oils Aloha
Kydol	Paraffin oil	Witco
Kytamer PC	Chitosan PC	Amerchol

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Lactil	Sodium lactate & sodium PCA & glycine &.....	Goldschmidt
Lameform TGI	Polyglyceryl-3 diisostearate	
Lamesoft PO 65	Coco-glucoside & glyceryl oleate	Henkel
Lamesoft PW 25	Cetyl palmitate & beheneth-10 & hydrogenated castor oil & glyceryl stearate	Henkel
Lamesoft PW 45		Henkel
Lanapene		Lanaetex
Lanette O	Cetearyl alcohol	Henkel
Lanette 18		Henkel
Lanoquat 50		
Lantrol AWS 1692	PPG-12 PEG-65 lanolin oil	Henkel
Lauramide DEA		
Lavender Fleurs 40/42	Lavender oil	
Lexein QX-300	Hydrolyzed animal protein	Inolex
Lexol IPM	Isopropyl myristate	Inolex
Lexol IPP	Isopropyl palmitate	Inolex
Lipamide MEAA (75%)	Acetamide MEA	Lipo
Lipocol C	Cetyl alcohol	Lipo
Lipocol L-4	Laureth-4	Lipo
Lipo GMS-450	Glyceryl stearate	Lipo
Lipolan R	Lanolin oil	Lipo
Lipomulse 165	Glyceryl stearate/PEG-100 stearate	Lipo
Liponate IPM	Isopropyl myristate	Lipo

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Liponate IPP	Isopropyl palmitate	Lipo
Liponate NPGC-2	Neopentylglycol dicaprylate/ dicaprinate	Lipo
Liponate TDTM	Tridecyl trimellitate	Lipo
Liponate 2-DH	PEG-4 diheptanoate	Lipo
Liponic EG-1	Glycereth-26	Lipo
Lipopeg 2-DL	PEG-4 dilaurate	Lipo
Lipopeg 4-DL	PEG-8 dilaurate	Lipo
Lipopeg 4-S	PEG-8 stearate	Lipo
Lipopeg 6000-DS	PEG-150 distearate	Lipo
LipoPearls	White beads w/ vitamin E	Lipo
Liposilt Green	Silt	Lipo
Lipo Stearic Acid		Lipo
Liposurf EST-30	Sodium laureth sulfate	Lipo
Lipovol ALM	Sweet almond oil	Lipo
Lipovol CO	Castor oil	Lipo
Lipovol MOS-70	Natural vegetable oil	Lipo
Lipovol MOS-130	Natural vegetable oil	Lipo
Lipovol SES	Sesame oil	Lipo
Lipowax P	Emulsifying wax, NF	Lipo
Liquapar	Preservative	ISP/Sutton
Locron L & P	Aluminum chlorohydrate	
Lonzaine C	Cocamidopropyl betaine	Lonza
Lotion 4047	Fragrance	
Lubragel MS		

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Lunacera M	Microwax	HBFuller
Luviskol K90 Powder	PVP (100%). Hair setting agent	BASF
Luviskol VA-73W	PVP/VA copolymer (50%)	BASF
Luvitol EHO	Cetearyl octanoate	BASF
Macademia Nut Oil		OilsAloha
Mackamide AME	Acetamide MEA. Humectant	McIntyre
Mackanate DC-30	Disodium dimethicone copolyol sulfosuccinate surfactant	McIntyre
Mackanate EL	Disodium laureth sulfosuccinate secondary surfactant	McIntyre
Macol CA-30P	PPG-30 cetyl ether	PPG
Macol CSA-20	Ceteareth-20	PPG
Macol NP-9.5	Nonoxynol-9	PPG
Macol 57	PPG-10 butanediol	PPG
Macol 124	Cetearyl alcohol & ceteareth-20	PPG
Macol 159	PEG-7 glyceryl cocoate	PPG
Mafo CAB	Cocamidopropyl betaine	PPG
Mafo CSB-50	Cocamidopropyl hydroxysultaine	PPG
Magnabrite HV	Stabilizing, suspending agent	AMColloid
Maltrin M-100	Maltodextrin	GrainProces
Mandelol	Almond oil	
Mapeg EGMS	Glycol stearate	PPG
Mapeg 400 DO	PEG-8 dioleate	PPG
Mapeg 6000 DS	PEG-150 distearate	PPG
Marindew PC-100	Partially deacetylated chitin	Ajinomoto

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Marlipal 1618/25	Ceteareth-25	Huls
Marlowet TA 6	Ceteareth-6	Huls
Marlowet TA 25	Ceteareth-25	Huls
Masil SF-V	Cyclomethicone	PPG
Masil SF-100	Dimethicone	PPG
Masil SF-756	Phenyl trimethicone	PPG
Masil SF-1000	Dimethicone	PPG
Mazamide JT-128	Cocamide DEA	PPG
Mazamide SS-10	Soyamide DEA	PPG
Mazamide 80	Cocamide DEA	PPG
Mazeen 174	PPG-4 ethylene diamine	PPG
Mazol EE-1	Benzyl laurate	PPG
Mazon 159	PEG-7 glyceryl cocoate	PPG
Mazox CAPA	Cocamidopropyl amine oxide	PPG
Mazox LDA	Lauramine oxide	PPG
Merquat Plus 3330	Polyquaternium-39. Hair conditioner	Calgon
Merquat 550	Polyquaternium-7	Calgon
Methocel A4M & E4M & E4M Premium EP & K110LV & 40-100	Hydroxypropyl methyl cellulose	Dow
Microcrystalline Wax		Keunen
Miglyol Gel B	Caprylic/capric triglyceride & stearalkonium hectorite & propylene carbonate	Creanova
Miglyol 812	Caprylic/capric triglyceride	Creanova

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Miglyol 829	Caprylic/capric/succinic triglyceride	Creanova
Miglyol 840	Propylene glycol dicaprylate/dicaprate	Creanova
Mineral Colloid BP	Montmorillonite	ECCAmerica
Minosil		PrideSolven
Miracare 2MCAS	Cocoamphodiacetate & sodium lauryl sulfate & sodium....	RhonePoul
Miranol Ultra	Cocoamphoacetate (32%). Surfactant	RhonePoul
Moisturizing Phyto-amine Biocomplex	Comfrey extract & plaitain extract & hydrolyzed wheat protein & amino acids	AlbanMuller
Monafax MAP160	Phosphate ester	Mona
Monafax MAP230	Phosphate ester	Mona
Monalac MAB		Mona
Monalac ML		Mona
Monalac MO		Mona
Monalac MPL		Mona
Monamid CMA	Cocamide MEA	Mona
Monamid 716	Lauramide DEA	Mona
Monamuls 60-35C	Hydrogenated palm glycerides	Mona
Monamuls 90 L 12	Glyceryl laurate	Mona
Monamuls 90-018	Glyceryl oleate	Mona
Monaquat ISIES	Quaternary compound	Mona
Monaquat SL-5		Mona
Monaquat TG	Quaternary phospholipid	Mona

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Monasil PCA		Mona
Monasil PDM		Mona
Monasil PLN		Mona
Monateric CAB	Cocamidopropyl betaine	Mona
Monaterge 779		Mona
Monateric CAB-LC	Cocamidopropyl betaine	Mona
Monateric CLV		Mona
Monateric COAB	Cocamidopropyl betaine	Mona
Monateric LMAB	Lauramidopropyl betaine	Mona
Monateric 949J		Mona
Myritol PC	Propylene glycol dicaprylate/ dicaprinate	
Myritol 312 & 318	Caprylic/capric triglyceride	Henkel
Myritol 331	Cocoglycerides	Henkel
Myrj 52 & 52S	PEG-40 Stearate	ICI
Natipide II	Water & alcohol & lecithin	Natterman
Natrosol 250HHR & 250HR	Hydroxyethylcellulose	Aqualon
Natrosol Plus 330 CS	Cetyl hydroxyethylcellulose	Aqualon
Neobee M-5	Caprylic/capric triglyceride	Stepan
Neodol 25-3S	Sodium C12-15 pareth sulfate	Shell
Neo Heliopan, Type AV	Octyl methoxycinnamate	Haarman&
Neo Heliopan BB	Benzophenone-3 sunscreen	Haarman&
Neo Heliopan E1000	Isoamyl p-methoxycinnmate	Haarman&

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Neo Heliopan, Type OS	Octyl salicylate sunscreen	Haarman&
Neutrol TE	Tetrahydroxypropyl ethylene-diamine	BASF
NF White Beeswax		Keunen
N-Hance 3000	Cationic guar	Aqualon
Nikkol Lecinol S-10-M		Barnet
Nimlesterol D	Mineral oil	Malmstrom
Nimlesterol 1732	Mineral oil & lanolin alcohol	Henkel
Ninol LMP	Alkanolamide	Stepan
Ninol 2012 Extra	Alkanolamide	Stepan
Novarome NC-46 & NC-48	Fragrances	Novarome
Novata AB	Coco glycerides	CLRichter
Nuosept C	Polymethoxy bicyclic oxazolidone	Huls
Nutralin I	Collagen	Henkel
Oil of Mink	AAA Refined	Emulan
Orange Wax		Keunen
Orgasol 2002D	Nylon-12	Lipo
Oxybenzone		
Oxynex K Liquid	PEG-8 & tocopherol & ascorbyl palmitate & ascorbic acid & citric acid	Zschimmer
Oxynex LM	Antioxidant	Zschimmer
Oxynex 2004	Antioxidant	Zschimmer
Oyster Nut Oil		Keunen
Ozokerite 158/160 & 160/164 & 170		Keunen

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Panacete 810	Vegetable oil	
Panalene L-14E	Hydrogenated polyisobutene	Amoco
Paraffin Oil Liquid	Mineral oil	Merck
Paraffin Wax 130/135		Keunen
Paraffin Wax 160/165		Keunen
Parsol MCX	Octyl methoxycinnamate	Givaudan
Parsol 1789	Butyl methoxydibenzoylmethane	Givaudan
Pationic CSL	Calcium stearoyl lactylate	RITA
Pationic ISL	Sodium isostearoyl lactylate	RITA
Pationic SBL	Sodium behenoyl lactylate	RITA
Pationic SCL	Sodium cocoyl lactylate	RITA
Pationic SSL	Sodium stearoyl lactylate	RITA
Patlac LA	Lactic acid	RITA
PEG-150 Distearate		
PEG-1450		UnionCarb
Pemulen TR-1	Acrylates/C10-30 alkyl acrylate	BFGoodrich
Pemulen TR-2	Acrylates/C10-30 alkyl acrylate crosspolymer/Emulsifier	BFGoodrich
Peppermint (Mentha Piperita) Oil		Technology
Peppermint Oil, Refined		Technology
Perfecta	Petrolatum	Witco
Perfume A10003E	Fragrance	
Perfume "Olivia"		
Perfume 72979		
Perlaturm 410CG	Petrolatum	S&S

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Permethyl 104A	Aliphatic hydrocarbon	Presperse
Permulin D	Emulsifying wax	Keunen
Permulin 2550	Beeswax (Cera alba)	Keunen
Petro LBA Liquid		Witco
Petro BAF Liquid		Witco
Petro LBA Powder		Witco
Phenonip	Liquid preservative system	Nipa
Phospholipid EFA	Hair conditioner	Mona
Phospholipid PTC & SV	Biomimetric phospholipid	Mona
Phytodermin	Soybean (glycine soya) protein	
Plantacare K55	Lauryl glucoside & cocamido-propyl betaine	
Plantacare PS 10	Sodium laureth sulfate & lauryl glucoside	
Plantacare 1200 UP	Lauryl glucoside	
Plantaren PS-100	Surfactant	Henkel
Plantaren 1200	Lauryl glucoside	Henkel
Plantaren 2000	Decyl polyglucose (50%)	Henkel
Plantaren 2000 UP	Lauryl glucose	Henkel
"Polo Sport" Type #A11518	Fragrance	Haarman&
Polyethylene AC-9A		Allied
Polyethylene Glycol 400: PEG-8		
Polyethylene Glycol 1500: PEG-30		
Polymer JR-30M	Polyquaternium-10	UnionCarb
Polymer JR-125	Polyquaternium-10	UnionCarb

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Polyox WSR N-3000	PEG-14M	UnionCarb
Polyquta 400	Polyquaternium-10	RITA
Polysynlane	Hydrogenated polyisobutene	Polyester
Pricerine 9083	Glycerin	Unichema
Prisorine 2021	Isopropyl isostearate	Unichema
Prodew 100	Sorbitol/sodium lactate/pro- line/sodium PCA/hydrolyzed collagen	Ajinomoto
Prodew 200		Ajinomoto
Prodew 400		Ajinomoto
Product SE-100	Glyceryl stearate & PEG-100 stearate	Heterene
Promois Milk	Hydrolyzed casein	RITA
Promois Silk-1000	Hydrolyzed silk	RITA
Promulgen D	Cetearyl alcohol/ceteareth-20	Amerchol
Promulgen DD		Amerchol
Promyristyl PM-3	PPG-3 myristyl ether	Croda
Propal	Isopropyl palmitate	Amerchol
Propanediol-1,2	Propylene glycol	
Protasorb	Polysorbate 20. Lubricant	Protameen
Protectan	Lactococcus ferment lysate	
Pyroter CPI-40	PEG-40 hydrogenated castor oil PCA isostearate	Ajinomoto
Pyroter CPI-60		Ajinomoto
Pyroter GPI-25	Glycereth-25 PCA isostearate	Ajinomoto

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Raffermine	Hydrolyzed soy flour	RITA
Reach AZP-902	Antiperspirant	Reheis
Reach AZP-908 SUF	Antiperspirant	Reheis
Reach 103	Antiperspirant	Reheis
Reductine	Oat protein	RITA
Rewopal PIB 1000	Polyisobutene	Witco
Rewoteric AM B-14	Cocamidopropyl betaine	Witco
Rewoteric AM B-15	Cocamidopropyl betaine	Witco
Rewoteric AM DML-35	Cocamidopropyl betaine	Witco
Rewoteric AM TEG		Witco
Rewoteric AM 2CW		Witco
Rhodapon L-22	Ammonium lauryl sulfate	RhonePoul
Rhodapon 201-10	Sodium laureth sulfate, 60%	RhonePoul
Rhodigel	Xanthan gum	RTVanderbil
Rice Bran Oil		Keunen
Ritabate-20	Polysorbate-20	RITA
Ritabate-60	Polysorbate-60	RITA
Rita CA	Cetyl alcohol	RITA
Rita Cetearyl Alcohol 50/50		RITA
Ritacetyl Alcohol	Cetearyl alcohol	RITA
Ritachol	Mineral oil & lanolin alcohol	RITA
Rita EGMS	Glycol stearate	RITA
Rita GMS	Glyceryl stearate	RITA
Rita HA C-1-C	Sodium hyaluronate	RITA

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Rita IPP	Isopropyl palmitate	RITA
Ritalan	Lanolin oil	RITA
Ritaloe 1X	Aloe vera gel	RITA
Ritamide C	Cocamide DEA	RITA
Ritapan D	d-Panthenol	RITA
Ritapan DL	dL-Panthenol	RITA
RitaPEG 150 DS	PEG-150 distearate	RITA
Rita PEO-3	PEG-23M	RITA
Ritaplast	Mineral oil & polyethylene	RITA
Rita SA	Stearyl alcohol	RITA
Ritasil 190	Dimethicone copolyol	RITA
Rita SSO	Sunflower seed oil	RITA
Ritataine	Cocamidopropyl betaine	RITA
Ritataine B	Cocamidopropyl betaine	RITA
Ritavena-5	Hydrolyzed oat flour	RITA
Ritawax ALA	Cetyl acetate & acetylated lanolin alcohol	RITA
Rovisome C	Magnesium ascorbyl phosphate & lecithin	RITA
Sachtotec LA10	Zinc oxide	Sachtelben
Sandobet SC Liquid	Cocamido propyl hydroxysultaine	Clariant
Sandobet DTC Acid	Trideceth-7 carboxylic acid	Clariant
Sandopan ES-50	Sodium myreth sulfate	Clariant
Sandopan KST-A Solid	Sodium ceteth-13 carboxylate	Clariant

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Sandopan LS-24 Gel	Sodium laureth-13 carboxylate	Clariant
Sandoxylate SX-424	PPG-2-isodeceth-12	Clariant
Schercomid SLS	Soyamide DEA	Clariant
Serdolamide PPF 67	Cocamide DEA	Huls
Setacin 103	Disodium laureth sulfosuccinate	Zschimmer
Shebu Refined	Shea butter	RITA
Silicone 245 & 345 & 556		DowCorning
Siliconyl Beeswax	Dimethicone copolyol beeswax	Keunen
Silkol P55	Mineral oil	
Silk Powder		
Silwax WS	Dimethicone copolyol wax	Siltech
S-Maz 20/S-Maz 60	Sorbitan stearate	PPG
Softigen 701	Glyceryl ricinoleate	Creanova
Softigen 767	PEG-6 caprylic/capric glycerides	Creanova
Softisan Gel	Complex of chemicals	Creanova
Softisan 100	Hydrogenated coco-glycerides	Creanova
Softisan 378	Caprylic/capric/stearic tri-glyceride	Creanova
Softisan 601	Glyceryl cocoate/hydrogenated coconut oil/ceteareth-25	Creanova
Softisan 645	Bis-diglyceryl polyacyladipate-2	Creanova
Softisan 649	Bis-diglyceryl polyacyladipate-2	Creanova
Solulan C-24		Amerchol
Solulan 5	Laneth-5/ceteth-5/oleth-5/steareth-5	Amerchol

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Solvent ID	Isododecane	
Sorbitol F Liquid		
Sorbo	Sorbitol solution	ICI
Spicy Floral Fragrance #A41073		Haarman
Squalane		
Standamid KD	Cocamide DEA	Henkel
Standamid LD	Lauramide DEA	Henkel
Standamox		
Standapol A	Ammonium lauryl sulfate	Henkel
Standapol EA-1	Alkyl sulfate	Henkel
Standapol EA-2	Alkyl sulfate	Henkel
Standapol ES-2	Sodium laureth sulfate	Henkel
Standapol ES-3	Sodium laureth sulfate (30%)	Henkel
Standapol ES-50	Sodium myreth sulfate	Henkel
Standapol ES-250	Sodium laureth sulfate (53%)	Henkel
Standapol T	TEA lauryl sulfate (40%)	Henkel
Standapol WAQ-LC	Sodium lauryl sulfate (29%)	Henkel
Stepanol AM	Ammonium lauryl sulfate	Stepan
Stepanol WA-Extra	Sodium lauryl sulfate	Stepan
Stepanol WAT	TEA lauryl sulfate	Stepan
Super Hartolan	Lanolin alcohol	Croda
Super Refined Apricot Kernel Oil		Croda
Supersat	Hydrogenated lanolin	RITA
Surfactol Q1	Hair conditioner	CasChem

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Suttocide A	Neutralizer/preservative	Sutton
Synthetic Candelilla	Wax	Keunen
Synthetic Carnauba	Wax	Keunen
Tagat L	PEG-20 glyceryl cocoate	Goldschmidt
Tagat S2	PEG-20 glyceryl stearate	Goldschmidt
Tagat TO	PEG-25 glyceryl trioleate	Goldschmidt
Talc Supra A	Premium talc	RITA
Teginacid H	Glyceryl stearate/ceteth-20	Goldschmidt
Tegin EGS	Glycol distearate	Goldschmidt
Tegin M	Glyceryl stearate	Goldschmidt
Tegin P	Organic emulsifier	Goldschmidt
Tego Alkanol 16	Cetyl alcohol	Goldschmidt
Tego Alkanol 18	Stearyl alcohol	Goldschmidt
Tego Betaine 810	Caprylamido/capramidopropyl betaine	Goldschmidt
Tego Betaine E	Cocamidopropyl Betaine	Goldschmidt
Tego Betaine F	Cocamidopropyl Betaine	Goldschmidt
Tego Betaine F50	Cocamidopropyl Betaine	Goldschmidt
Tego Betaine L-7	Cocamidopropyl Betaine	Goldschmidt
Tego Care 215	Ceteareth-15/Glyceryl stearate	Goldschmidt
Tego Care 450	Polyglyceryl-3 methylglucose distearate	Goldschmidt
Tego Deo HY 77	Zinc ricinoleate/triethanol-amine/dipropylene glycol/lactic acid	Goldschmidt

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Tego Glucoside 1216	Lauryl glucoside	Goldschmidt
Tego Pearl N100	Glycol distearate/steareth-4	Goldschmidt
Tegosoftware CI	Cetearyl isononanoate	Goldschmidt
Tegosoftware CO	Cetyl octanoate	Goldschmidt
Tegosoftware CT	Caprylic/capric triglycerides	Goldschmidt
Tegosoftware DO	Decyl oleate	Goldschmidt
Tegosoftware GC	PEG-7 glyceryl cocoate	Goldschmidt
Tegosoftware GMC 6	PEG-6 caprylic/capric glyceride	Goldschmidt
Tegosoftware Liquid	Cetearyl octanoate	Goldschmidt
Tegosoftware LSE 65K	Sucrose cocoate	Goldschmidt
Tegosoftware M	Isopropyl myristate	Goldschmidt
Tegosoftware OP	Octyl palmitate	Goldschmidt
Tegosoftware OS	Octyl stearate	Goldschmidt
Tegosoftware P	Isopropyl palmitate	Goldschmidt
Tegosoftware SH	Stearyl heptanoate	Goldschmidt
Tenox 6	Antioxidant	Eastman
Tensine	Wheat protein	Henkel
Texapon A	Ammonium lauryl sulfate	Henkel
Texapon NA	Ammonium laureth sulfate	Henkel
Texapon NSO	Sodium laureth sulfate	Henkel
Texapon SB-3	Disodium laureth sulfosuccinate	Henkel
Texapon SG	Sodium laureth sulfate/cocamide MEA/glycol distearate	Henkel
Texapon WW 99	MIPA laureth sulfate/cocamide DEA	Henkel

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Thiosome		
Timica	Mica and titanium dioxide	Mearl
Timiron MP-149	Mica and titanium dioxide	Rona
Timiron MP-1001 Supersheen	Mica and titanium dioxide	Rona
Timiron Silk Red	Mica and titanium dioxide	Rona
Tioveil OP	Octyl palmitate and titanium dioxide	Tioxide
Titanox	Titanium dioxide	
T-Maz 20	Polysorbate 20	PPG
T-Maz 28	PEG-80 sorbitan laurate	PPG
T-Maz 60	Polysorbate 60	PPG
T-Maz 80	Polysorbate 80	PPG
Transcutol	Specialty solvent	Gattefosse
Traubeukernol	Vitis vinifera	
Triclosan		
Tris(hydroxymethyl)-aminomethane		
Tritiplex III	Disodium EDTA	
Tween 20	Polysorbate 20 lubricant	ICI
Tween 60	Polysorbate 60	ICI
Tween 85	Polysorbate 85	ICI
Tylose H 400P Tylose H 100,000YP Tylose H2O tylose YP 100,000	Hydroxyethyl cellulose	Hoechst

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Ucare Polymer JR-30M	Polyquaternium-10	Amerchol
Ucare Polymer JR-125	Polyquaternium-10	Amerchol
Ucare Polymer JR-400	Polyquaternium-10	Amerchol
Ucare Polymer LK	Polyquaternium-10	Amerchol
Ucon Fluid AP		UnionCarb
Ucon 50-HB-660	PPG-12-Buteth-16	UnionCarb
Ultra Lantrol HP 2074	Lanolin oil	
Ultrapure L	White petrolatum USP	Ultra
Unicide U-13	Imidazolidinyl urea	Lipo
Uniphen P-23	Phenoxyethanol/methylparaben/ ethylparaben/propylparaben/ butylparaben	Lipo
Uvinul M-40	Oxybenzone sunscreen	BASF
Uvinul MS-40	Benzophenone-4. UV absorber	BASF
Vanclay	Kaolin	Vanderbilt
Vanseal NALS-30	Sodium lauroyl sarcosinate	Vanderbilt
Varamide A-83		Witco
Varamide MA-1		Witco
Varamide ML-1		Witco
Variquat 50MC		Witco
Varonic K202	Nonionic wetting agent	Witco
Varonic K215	Wetting agent	Witco
Varonic LI-48/LI-63/ LI-67/LI-420	Wetting agents	Witco
Varonic T202 SR	Wetting agent	Witco

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Varox 185E		Witco
Varox 365		Witco
Varox 1770		Witco
Varsulf SBFA-30		
Veegum	Magnesium aluminum silicate	Vanderbilt
Veegum F	Magnesium aluminum silicate	Vanderbilt
Veegum HS	Magnesium aluminum silicate	Vanderbilt
Veegum HV	Magnesium aluminum silicate	Vanderbilt
Veegum R	Magnesium aluminum silicate	Vanderbilt
Veegum Ultra	Magnesium aluminum silicate	Vanderbilt
Velsan D8P-3	Isopropyl PPG-2 isodeceth-7 carboxylate	Clariant
Velsan D8P-16	Cetyl PPG-2 isodeceth-7 carb-oxylate	Clariant
Velsan P8-3 Liquid	Isopropyl C12-15 Pareth-9-carb-oxylate	Clariant
Velvetex BK-35	Cocamidopropyl betaine	Henkel
Versene NA	Disodium EDTA. Chelating agent.	Dow
Versene 100	Tetrasodium EDTA chelating agent	Dow
Vitamin-A-Palmitate	Retinyl palmitate	
Vitamin E Acetate	Tocopheryl acetate	BASF
Volpo-10	Oleth-10 solubilizer	Croda

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Wacker-Belsil CM020	Cyclomethicone	Wacker
Wacker-Belsil CM040	Cyclomethicone	Wacker
Wacker-Belsil CM1000	Cyclomethicone, dimethiconol	Wacker
Wacker-Belsil DM100	Dimethicone	Wacker
Wacker-Belsil DM350	Dimethicone	Wacker
Wacker-Belsil DMC6032	Dimethicone copolyol	Wacker
Wacker-Belsil DMC6038	Dimethicone copolyol	Wacker
Wacker-Belsil PDM020	Phenyl trimethicone	Wacker
Wacker-Belsil SDM6022	Stearoxy dimethicone, dimethicone	Wacker
Wacker-Belsil SM6018	Stearyl methicone	Wacker
Witcamide CDA	Alkanolamide	Witco
Witcamide S-780	Alkanolamide	Witco
Witcamide 128T	Alkanolamide	Witco
Witcamide 511	Alkanolamide surfactant	Witco
Witcamide 6445	Alkanolamide surfactant	Witco
Witco 1298 Soft Acid		Witco
Witcolate ES-2	Surfactant	Witco
Witcolate LES-60A	Surfactant	Witco
Witcolate SE-5	Surfactant	Witco
Witcolate WAC-LA	Surfactant	Witco
Witconate AOS	Surfactant	Witco
Witconate AOS-PC	Surfactant	Witco
Witconate SXS Liquid	Surfactant	Witco
Witconate 30DS	Surfactant	Witco

RAW MATERIALS	CHEMICAL DESCRIPTION	SOURCE
Witconate 79S	Surfactant	Witco
Witconate 93S	Surfactant	Witco
Witconate 1260 Slurry	Surfactant	Witco
Witconol EGMS		Witco
Witconol NP-120	Nonionic surfactant	Witco
Witconol 14	Polyglyceryl-4 oleate nonionic	Witco
Zinc Omadine FPS	Zinc pyrithione (48%)	Olin
Zincum N29	Zinc stearate	Henkel
102 Magnabrite HV	Stabilizing, suspending agent	AmerColloid
99411 Fruit Blend	Fragrance	Drom

Section XIV

Suppliers' Addresses

Active Organics Inc.
11230 Grader St.
Dallas, TX 75238
(214)-348-2015/(800)-541-1478

Agrashell Inc.
5934 Keystone Dr.
Bath, PA 18014
(215)-837-6705

Ajinomoto USA Inc.
Glenpoint Ctr. W
500 Frank W. Burr Blvd.
Teaneck, NJ 07645
(201)-907-3244

Akzo Chemicals Inc.
300 South Riverside Plaza
Chicago, IL 60606
(312)-906-7500

Alban Muller International
Tri-K Industries
27 Bland St.
Emerson, NJ 07630
(201)-261-2800/(800)-526-0372

Albright & Wilson Americas
P.O. Box 26229
Richmond, VA 23260
(804)-550-4300/(800)-446-3700

Allied Signal Inc.
P.O. Box 2332R
Morristown, NJ 07962
(201)-455-2000

Amerchol Corp.
P.O. Box 4051
136 Talmadge Rd.
Edison, NJ 08818
(908)-248-6000

American Colloid Co.
Hwy 212W
Belle Fourche, SD 57717
(605)-892-2591

Amoco Chemical Co.
200 E. Randolph Dr.
Chicago, IL 60601
(312)-856-3200/(800)-621-4567

Angus Chemical Co.
1500 E. Lake Cook Rd.
Buffalo Grove, IL 60089
(708)-215-8600/(800)-323-6209

Aqualon
1313 N. Market St.
Wilmington, DE 19899
(302)-594-5000/(800)-345-8104

Atochem North America
900 Milk St.
Cartaret, NJ 07008
(908)-541-4414

Barnet Products Corp.
560 Sylvan Ave.
Englewood Cliffs, NJ 07632
(201)-569-6622

BASF Corp.
100 Cherry Hill Rd.
Parsippany, NJ 07054
(201)-316-3000/(800)-526-1072

Bell Flavors & Fragrances Inc.
500 Academy Dr.
Northbrook, IL 60062
(312)-291-8300/(800)-323-4387

Bernel Chemical Co. Inc.
174 Grand Ave.
Englewood, NJ 07631
(201)-569-8934

Biomatrix Inc.
65 Railroad Ave.
Ridgefield, NJ 07657
(201)-945-9550

BK-Ladenburg Corp.
50 Spring St.
Cresskill, NJ 07626
(201)-567-9100/(800)-526-2688

Brooks Industries Inc.
70 Tyler Place
South Plainfield, NJ 07080
(908)-561-5200

Calgon Corp.
P.O. Box 1346
Pittsburgh, PA 15230
(412)-777-8000

Capital City Products Co.
525 W. First Ave.
Columbus, OH 43216
(614)-299-3131/(800)-848-1340

CasChem Inc.
40 Avenue A
Bayonne, NJ 07002
(201)-858-7900/(800)-CAS-CHEM

Centerchem Inc.
225 High Ridge Rd.
Stamford, CT 06905
(203)-975-9800

Ciba-Geigy Corp.
410 Swing Rd.
Greensboro, NC 27419
(919)-632-7327/(800)-221-0453

Clariant Corp.
4000 Monroe Road
Charlotte, NC 28205
(704)-331-7000

Colorcon Inc.
Moyer Blvd.
West Point, PA 19486
(215)-699-7733

A & E Connock Ltd.
Fordingsbridge,
Hunts, UK

Creanova Inc.
220 Davidson Ave.
Somerset, NJ 08873
(732)-560-6800

Croda Inc.
7 Century Drive
Parsippany, NJ 07054
(201)-644-4900

Degussa Corp.
65 Challenger Rd.
Ridgefield Park, NJ 07660
(201)-641-6100

Dow Chemical USA
2020 Dow Center
Midland, MI 49674
(800)-258-CHEM

Dow Corning Corp.
Box 0994
Midland, MI 48686
(517)-496-4000

Dragoco Inc.
10 Gordon Drive
Totowa, NJ 07512
(201)-256-3850

Drom International Inc.
5 Jacksonville Rd.
P.O. Box 5
Towaco, NJ 07082
(201)-316-8400

DuPont Co.
1007 Market St.
Wilmington, DE 19898
(800)-441-7515

Eastman Chemical Co.
P.O. Box 431
Kingsport, TN 37662
(615)-229-4006/(800)-EASTMAN

ECC America
5775 Peachtree-Dunwoody Rd.
Atlanta, GA 30342
(800)-843-3222

Emulan Inc.
P.O. Box 582
Kenosha, WI 53141
(414)-654-0734

Fanning Corp.
2450 W. Hubbard St.
Chicago, IL 60612
(312)-563-1234

Finetex Inc.
418 Falmouth Ave.
Elmwood Park, NJ 07407
(201)-797-4686

FloraTech
2295 S. Coconino Dr.
Apache Junction, AZ 85220
(602)-983-7909

Florida Food Products Inc.
2231 W Hwy 44
Eustis, FL 32726
(904)-357-4141

H.B. Fuller Co.
3530 N. Lexington Ave.
St. Paul, MN 55126
(612)-481-1588/(800)-468-6358

Gallard-Schlesinger Industries
584 Mineola Ave.
Carle Place, NY 11514
(516)-333-5600

Gattefosse Corp.
189 Kinderkamack Rd.
Westwood, NJ 07675
(201)-573-1700

GE Silicones
260 Hudson River Rd.
Waterford, NY 12188
(518)-237-3330/(800)-255-8886

Givaudan-Roure Corp.
100 Delawanna Ave.
Clifton, NJ 07015
(201)-365-8000

Goldschmidt Chemical Corp.
914 E. Randolph Rd.
Hopewell, VA 23860
(804)-541-8658/(800)-445-1809

BF Goodrich Co.
9911 Brecksville Rd.
Cleveland, OH 44141
(216)-447-5000/(800)-331-1144

Grain Processing Corp.
1600 Oregon St.
Muscatine, IA 52761
(319)-264-4265

Haarman & Reimer Corp.
60 Diamond Rd.
Springfield, NJ 07091
(201)-912-5707/(800)-432-1559

Hampshire Chemical Co.
55 Hayden Ave.
Lexington, MA 02173
(617)-861-6600

Henkel Corp.
11501 Northlake Drive
Cincinnati, OH 45299
(513)-530-7300/(800)-543-7370

Hoechst Celanese Corp.
3340 W. Norfolk Rd.
Portsmouth, VA 23703
(800)-483-7530/(800)-526-4960

Hoffman-LaRoche Inc.
340 Kingsland St.
Nutley, NJ 07110
(201)-235-8080/(800)-526-0189

Hormel
P.O. Box 800
Austin, MN 55912
(507)-437-5676

J.M. Huber Corp.
Thornall St.
Edison, NJ 08837
(201)-549-8600

Huls America Inc.
80 Centennial Dr.
Piscataway, NJ 08854
(908)-980-6946/(800)-526-0339

Hydrolabs Inc.

27 E 33 St.
Paterson, NJ 07514
(201)-345-5100

ICI Americas Inc.

Concord Pike & New Murphy Rd.
Wilmington, DE 19897
(302)-575-3034/(800)-822-8215

Inolex Chemical Co.

Jackson & Swanson Sts.
Philadelphia, PA 19148
(215)-271-0800/(800)-521-9891

ISP: International Specialty Products

1361 Alps Rd.
Wayne, NJ 07470
(201)-628-3000/(800)-848-7659

Karlshamns USA Inc.

501 W. First Ave.
P.O. Box 569
Columbus, OH 43201
(614)-299-3131

Kelco Div.

Merck & Co. Inc.
8355 Aero Drive
San Diego, CA 92123
(619)-292-4900/(800)-535-2656

Kemira Inc.

1170 Rte 22E
P.O. Box 6784
Bridgewater, NJ 08807
(201)-526-4644/(800)-4-KEMIRA

Koster-Keunen Inc.

P.O. Box 447
90 Bourne Blvd.
Sayville, NY 11782
(516)-589-0456

Lanaetex Products Inc.

151 3 Ave.
Elizabeth, NJ 07206
(908)-351-9700

Lipo Chemicals Inc.

207 19th Ave.
Paterson, NJ 07504
(201)-345-8600

Lonza Inc.

17-17 Rte. 208
Fair Lawn, NJ 07410
(201)-794-2400/(800)-777-1875

McIntyre Group Ltd.

1000 Governors Hwy
University Park, IL 60466
(708)-534-6200

Mearl Corp.

41 E 42nd St.
New York, NY 10017
(212)-573-8500

E. Merck

Darmstadt, Germany

Mona Industries Inc.

76 E 24 St.
P.O. Box 425
Paterson, NJ 07544
(201)-345-8220

Morflex Inc.

2110 High Point Rd.
Greensboro, NC 27403
(919)-292-1791

National Starch & Chemical Co.

10 Finderne Ave.
Bridgewater, NJ 08807
(908)-685-5000/(800)-532-1115

Natterman Phospholipid GmbH

Nattermannallee 1,
Cologne D-50829,
Germany
221-509-2239

Nipa Laboratories Inc.
104 Hagley Bldg.
Concord Plaza
3411 Silverside Rd.
Wilmington, DE 19810
(302)-478-1522

Novarome Inc.
30 Stewart Place
Fairfield, NJ 07004
(201)-575-4550

Oils of Aloha
P.O. Box 685
66-935 Kaukonahua Rd.
Waialua, Hawaii 96791
(800)-367-6010

Olin Corp.
120 Long Ridge Rd.
P.O. Box 1355
Stamford, CT 06904
(203)-356-2000/(800)-243-9171

Original Bradford Soap Works
200 Providence St.
West Warwick, RI 02893
(401)-821-2141

Penreco
138 Petrolia St.
Karns City, PA 16041
(412)-283-5600/(800)-245-3952

Pentapharm Ltd.
Engelgasse 109, P.O. Box
Basel, Switzerland

Petrolite Corp.
6910 E 14 St.
Tulsa, OK 74112
(918)-836-1601

Phillips 66 Co.
376 Phillips Bldg. Annex
Bartlesville, OK 74004
(806)-274-5236/(800)-858-4327

Phoenix Chemical Co., Inc.
322 Courtyard Drive
Somerville, NJ 08876
(908)-707-0232

Pilot Chemical Co.
11756 Burke St.
Santa Fe Springs, CA 90670
(213)-723-0036

Polyester Corp.
61 Hill St.
P.O. Drawer 5076
Southampton, NY 11969
(516)-283-4400

PPG Industries
3938 Porett Drive
Gurnee, IL 60031
(708)-244-3410/(800)-CHEM-PPG

Presperse Inc.
601 Hadley Rd.
P.O. Box 735
South Plainfield, NJ 07080
(908)-756-2023

Proctor & Gamble Chemicals Div
P.O. Box 599
Cincinnati, OH 45201
(513)-983-5607/(800)-543-1580

Protameen Chemicals Inc.
375 Minnisink Rd.
Totowa, NJ 07511
(201)-256-4374

Quest International Fragrances
400 International Drive
Mount Olive, NJ 07828
(201)-691-7100

Reheis Inc.
235 Snyder Ave.
Berkeley Heights, NJ 07922
(908)-464-1500

Rheox Inc.
Wyckoff Mills Rd.
Hightstown, NJ 08520
(609)-443-2320

Rhone-Poulenc Inc.
Prospect Mains Rd.
Cranbury, NJ 08512
(609)-860-4000

Dr. K. Richter GmbH
Chemisches Laboratorium
Bennigonstrabe 25,
D-1000 Berlin

R.I.T.A. Corp.
1725 Kilkenny
Woodstock, IL 60098
(815)-337-2500/(800)-426-7759

Roche Chemical Division
Hoffman-LaRoche Inc.
Nutley, NJ 07110
(201)-235-8077/(800)-526-0189

Rohm & Haas Co.
Independence Mall West
Philadelphia, PA 19105
(215)-592-3000

Rona/EM Industries
5 Skyline Dr.
Hawthorne, NY 10532
(914)-592-4660

Frank B. Ross Co. Inc.
P.O. Box 4085
Jersey City, NJ 07304
(201)-433-4512

Scher Chemicals Inc.
Industrial w cor Styertowne Rd.
Clifton, NJ 07012
(201)-471-1300

Shell Chemical Co.
P.O. Box 2463
Houston, TX 77002
(713)-241-6161

S&S Chemical Co.
333 Jericho Tpke
Jericho, NY 11753
(516)-931-3333

Stepan Co.
22 W. Frontage Rd.
Northfield, IL 60093
(708)-446-7500

Sun Chemical Corp.
411 Summit Ave.
Cincinnati, OH 45232
(513)-681-5950/(800)-343-2583

Sutton Laboratories Inc.
116 Summit Ave.
Cincinnati, OH 45232
(513)-681-5950/(800)-343-2583

Technology Flavors & Fragrances
10 Edison St. E
Amityville, NY 11701
(516)-842-7600

Terry Laboratories Inc.
390 N. Wickham Rd.
P.O. Box 566
Melbourne, FL 32935
(407)-259-1630/(800)-367-2563

3V Inc.
1500 Harbor Blvd.
Weehawken, NJ 07087
(201)-865-3600

Tioxide Specialties Ltd.
Billingham, Cleveland TS23 1PS
United Kingdom
0642-370300

Tri-K Industries Inc.
P.O. Box 312
27 Bland St.
Emerson, NJ 07630
(201)-261-2800/(800)-526-0372

Trivent Chemical Co.
45 Ridge Rd.
P.O. Box 597
South River, NJ 08882
(908)-251-1116

Ultra Chemical Inc.
130 Maple Ave.
Red Bank, NJ 07701
(908)-224-0200

Unichema North America
4650 S. Racine Ave.
Chicago, IL 60609
(312)-376-9000/(800)-833-2864

Union Carbide Chemicals and
Plastics
39 Old Ridgebury Rd.
Danbury, CT 06817
(203)-794-5300

R.T. Vanderbilt Co. Inc.
30 Winfield St.
P.O. Box 5150
Norwalk, CT 06856
(203)-853-1400

Van Dyk
Main & William Sts.
Belleville, NJ 07109
(201)-450-3264

Vista Chemical Co.
900 Threadneedle
Houston, TX 77079
(713)-588-3000

Wacker Silicones Corp.
3301 Sutton Rd.
Adrian, MI 49221
(517)-264-8500/(800)-248-0063

Whittaker, Clark & Daniels
1000 Coolidge St.
South Plainfield, NJ 07080
(908)-561-6100

Witco Corp. (All Groups)
1) Oleo Surfactants
2) Petroleum Specialties Group
3) Polymer Additives Group
520 Madison Ave.
New York, NY 10022
(212)-605-3000

Witco Corp.
5777 Frantz Rd.-P.O. Box 646
Dublin, OH 43017
(614)-765-6500/(800)-366-6500

Zschimmer & Schwarz
P.O. Box 2179
D-5420 Lahnstein,
West Germany